

THE UNIVERSITY OF TEXAS AT AUSTIN

## RECOMMENDATION FOR CHANGE IN ACADEMIC RANK/STATUS

Name: Salamone, Salvatore EID: ss76649 Present Rank: Assistant Professor

Years of Academic Service (Include AY 2017-18 in each count):

At UT Austin since: 9/1/2015 (month/day/year) Total Years at UT Austin: 3In Present Rank since: 9/1/2015 (month/day/year) Total Years in Present Rank: 3

Tenure-track only:

Number of Years in Probationary Status: 3Additional information: AcceleratedPrimary Department: Civil, Architectural, and Environmental EngineeringCollege/School: Engineering, Cockrell School ofJoint Department: N/ACollege/School: N/AOther Department(s): N/ARecommendation actions<sup>1</sup>:By Budget Council/Executive Committee: PromoteVote<sup>2</sup> for promotion 23 ; Against 0 ; Abstain 0 ; Absent 9 ; Ineligible to vote 3By Department Chair: PromoteBy College/School Advisory Committee: PromoteVote<sup>2</sup> for promotion 7 ; Against 0 ; Abstain 0 ; Absent 0 ; Ineligible to vote 0By Dean: PromoteAdministrative Action: Promote to Associate ProfessorDate Action Effective: September 1, 2018

(To be submitted to the Board of Regents as part of the annual budget.)

By: Maurice M. Smith

For the President

Date: February 15, 2018<sup>1</sup>See "Chart of Recommended Actions" for eligible recommended actions applicable to specific conditions and administrative levels.<sup>2</sup>Record all votes for and against promotion, abstentions by eligible voting members, and the number of absent eligible voting members. The number of committee members ineligible to vote should also be recorded. Enter zero where it would otherwise be blank.

EVPP/4.15





The University of Texas at Austin

Cockrell School of Engineering

**Dean's Assessment****Salvatore Salamone**

Department of Civil, Architectural and Environmental Engineering  
Cockrell School of Engineering

Dr. Salvatore Salamone received his BS in civil engineering and his PhD in structural engineering from the University of Palermo (Italy) in 2002 and 2007, respectively. He served as a postdoctoral fellow in structural engineering at the University of California, San Diego between 2007 and 2010. He joined the faculty as an assistant professor in the Department of Civil, Structural and Environmental Engineering at the University at Buffalo in August 2010. His promotion case was considered during the 2014-15 academic year, and had he remained on the faculty, he would have been appointed as an associate professor in August 2015. He joined the Department of Civil, Architectural and Environmental Engineering at UT as an assistant professor in September 2015.

If promoted to associate professor in September 2018, Dr. Salamone will have accumulated three years of probationary service at UT and a total of eight years in rank as an assistant professor. While this case is considered to be accelerated when considering only Dr. Salamone's time at UT, his total time in rank exceeds our normal timeline.

Dr. Salamone is a structural engineer who develops methods for structural health monitoring and nondestructive evaluation. He has used guided ultrasonic waves and acoustic emissions to identify the initiation and location of structural damage in complex structural systems. He has also developed a vision-based system for automatic assessment of surface crack patterns in reinforced concrete structures. His work is fundamental to the Department of Civil, Architectural and Environmental Engineering's vision of developing innovative solutions to improve the sustainability of the urban infrastructure.

Eight external letters were submitted as part of the promotion dossier, with three letter writers recommended by Dr. Salamone and five selected by the budget council. One external reviewer is from Los Alamos National Laboratory<sup>1</sup>, and the other seven are faculty at US institutions: Columbia, Georgia Tech, Michigan, Penn State, Rice, and Stanford.

Teaching

While in rank at UT, Dr. Salamone has taught one undergraduate course and two graduate courses:

- CE 329, *Structural Analysis*  
Required undergraduate course  
Taught two times (average enrollment of 43 students)  
Instructor ratings: 4.8 to 4.9 | Course ratings: 4.5 to 4.6

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<sup>1</sup> Technically, Charles Farrar is not an arm's length reviewer because he and Dr. Salamone were co-authors on a conference paper in 2006. However, Dr. Salamone was a PhD student (in Italy) at the time and Dr. Farrar wrote in his letter that he met Dr. Salamone while he was a postdoctoral fellow at UCSD. Therefore, it is unlikely that they interacted directly during the preparation of this paper.

- CE 397, *Structural Health Monitoring and Nondestructive Evaluation*  
Graduate elective  
Taught two times (average enrollment of 15 students)  
Instructor ratings: 4.7 to 4.9 | Course ratings: 4.0 to 4.8
- CE 397, *Probabilistic Analysis and Design*  
Graduate elective  
Taught one time (8 students)  
Instructor rating: 4.4 | Course rating: 4.1

Dr. Salamone taught eleven courses as a faculty member at Buffalo. His average instructor rating was 4.55, and his instructor ratings dropped below 4.4 only twice. He is clearly an outstanding instructor. Senior faculty conducted peer evaluations in Dr. Salamone's courses two times in rank. The feedback from the peer evaluators was extremely positive, as are the student comments.

#### Research

Dr. Salamone's research specialty is related to structural health monitoring and nondestructive evaluation of civil infrastructure systems. His work includes both fundamental and applied techniques that utilize ultrasonics, acoustics, and vision-based inspection. Highlights of Dr. Salamone's research accomplishments include:

- 9 archival journal publications in rank at UT and 21 journal publications in rank at Buffalo (42 career total). He published 23 journal papers in rank with his graduate students.
- Many of his publications are in top journals in his field including *Structural Health Monitoring* (IF=3.5), *Smart Materials and Structures* (2.9), *Structural Control & Health Monitoring* (2.4), and *Ultrasonics* (2.3).
- 1 US patent awarded in rank at Buffalo.
- An h-index of 18 (Google Scholar) with 1,045 citations

Since joining UT, Dr. Salamone has received three external research grants totaling \$1.3 million (\$0.7 million his share). He is the sole PI on a grant from the Office of Naval Research and co-PI on two grants from the Texas Department of Transportation. While at Buffalo, Dr. Salamone received five research grants totaling \$0.63 million (\$0.60 million his share)<sup>2</sup>. He was the sole PI on grants from the National Science Foundation, the Pipeline and Hazardous Materials Safety Administration, the US Department of Transportation, and the New York State Pollution Prevention Institute. He was a co-PI on a grant from the State University of New York Research Foundation. His total research funding in rank is slightly less than \$2.0 million (\$1.3 million his share).

The letters from the external reviewers were uniformly positive and identified the novel aspects of his research. No concerns were identified.

#### Advising and Student Mentoring

At Buffalo, Dr. Salamone graduated three PhD and three MS students. He also supervised two postdoctoral fellows. He has graduated one MS student at UT, and he is currently advising four PhD students (one is co-supervised) and one MS student.

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<sup>2</sup> He also received a small award from the American Society of Nondestructive Evaluation to revise the content of a graduate course.

University Service

Dr. Salamone's university service has been focused at the department level at UT. He has served on two committees, most notably the Strategic Vision Implementation Committee. He is currently co-chair of the graduate recruiting committee within structural engineering.

Professional Service

Dr. Salamone currently serves on three technical committees within the American Society of Civil Engineers and the American Society of Mechanical Engineers. He has organized sessions at technical conferences and served on the organizing committee for international workshops. He also serves on the editorial board of three journals.

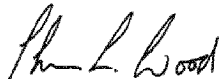
Other Evidence of Merit or Recognition

Dr. Salamone received the Achenbach Medal from the *Journal of Structural Health Monitoring* in 2014. This award recognizes an individual<sup>3</sup> who has made outstanding contributions to the advancement of the field of structural health monitoring. Daniel Inman<sup>4</sup> (Michigan) served on the selection committee for this award and noted that the "competition for receiving this award is fierce."

Overall Assessment

Dr. Salamone has developed a strong, well-balanced record of research, teaching, and service. His publication record is very strong and he has successfully transitioned his independent research program from Buffalo to UT. He is also an outstanding teacher. His prominence in his field is immediately evident from the strong external letters and the Achenbach Medal.

Overall, I believe that Dr. Salamone's performance exceeds expectations in the areas of teaching and research, and meets expectations in the area of service. Accordingly, I am pleased to provide my strong recommendation that Dr. Salamone be promoted to associate professor with tenure.



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Sharon L. Wood, Dean  
17 November 2017

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<sup>3</sup> Awardees must be within ten years of completing their PhD.

<sup>4</sup> Department Chair, Aerospace Engineering



Department of Civil, Architectural and Environmental Engineering

Statement by Department Chair

Candidate: **Salvatore Salamone**

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Dr. Salvatore Salamone joined the faculty of the Department of Civil, Architectural and Environmental Engineering (CAEE) at the University of Texas at Austin (UT) in August of 2015 and has been in rank as assistant professor since that time. Prior to assuming a position in CAEE at UT, Salvatore was an assistant professor at the University of Buffalo (UB) for five years. He was promoted to associate professor there shortly before joining the faculty of CAEE at UT. He was also a post-doctoral fellow at UC San Diego for slightly over three years following completion of his Ph.D. at the University of Palermo in 2007, and prior to his first academic position at UB. His general areas of expertise include structural health monitoring (SHM) and non-destructive evaluation (NDE) of structures.

My assessment of Salvatore is based on a detailed analysis of (1) his curriculum vitae and statements, (2) Budget Council statements, (3) letters from external reviewers, (4) CIS evaluations for all courses taught in rank, (5) written student comments for courses taught in rank, (6) peer teaching evaluations completed during current academic rank, (7) publications and citations, (8) Budget Council discussions and vote on whether Salvatore should be promoted, and (9) comparisons with a recent (past four years) set of faculty members who were promoted from assistant to associate professor or from associate to full professor.

The remainder of this Chair's statement includes a discussion of the Budget Council vote on Salvatore's case, and Salvatore's performance in teaching, research, academic advising, administrative and committee service (at UT and in profession), as well as honors and recognition. Selective comments made by external reviewers are added to this statement. My recommendation on Salvatore's promotion case is provided at the end of this statement.

#### **Budget Council Discussion and Vote**

The Budget Council vote was strongly in support of Salvatore's promotion to associate professor (Overall recommendation: **23 Yes, 0 No, 0 Abstain**).

The discussion by the Budget Council following the presentation of Salvatore's case was entirely positive. The discussion was the shortest of my tenure as Chair of CAEE. There were a couple of comments regarding his outstanding performance as a teacher. The structural engineering group within the Budget Council (in full attendance) gave a strong and unanimous endorsement in favor of Salvatore's promotion.

#### **Teaching**

Assistant professors in CAEE are generally required to teach three courses per year, except in their first year during which they teach two courses; one recent hire at the assistant professor level negotiated two years of teaching 2 courses/yr. As such, the "norm" for assistant professors is to teach 14 courses by the time they submit their promotion package after five years in rank. There are exceptions to this norm, often involving more than 14 courses. For example, if a new faculty member starts in the spring semester and then completes five full years starting the next fall before submitting a promotion package they will have taught 15 or 16 courses. If a faculty member has one semester of modified instructional duties and stops the "tenure clock" he or she will still have taught one semester that year, and so will generally have

15 or 16 courses at time of review for promotion and tenure. As Chair, I generally discourage assistant professors from buying out courses. It is possible that an assistant professor has less than 14 courses at the time of promotion and tenure review if one of their courses, usually a graduate course, is canceled for insufficient enrollment.

Salvatore has been in rank as an assistant professor for four academic semesters at UT following five full years at the University of Buffalo. As such, he has taught five courses since joining the faculty of CAEE at UT, two in his first year and three in his second year.

Salvatore has taught three unique courses to five classes totaling 124 students (86 undergraduate and 38 graduate students) in four semesters at UT. Salvatore's overall instructor and course ratings by students across all courses has been 4.74 and 4.40, respectively.

Salvatore has taught CE329 –*Structural Analysis* two times (69% of his total in-class student contact hours are in CE329). This 3<sup>rd</sup>-year course is required of all undergraduate civil and architectural engineering students. The average enrollment has been 43 students in Salvatore's two offerings of this course. The course covers a wide range of fundamental principles and applications relevant to structural engineering. Salvatore's mean student evaluations for instructor and course in his two offerings of CE329 have been 4.85 and 4.55, respectively.

Salvatore has also taught two graduate courses – CE397 - *Structural Health Monitoring and Non-Destructive Evaluation* two times to 30 students, and CE397 – *Probabilistic Analysis and Design* one time to eight students. Both of these courses are new to our curriculum; Salvatore has added courses that previously did not exist. Salvatore's mean instructor and course evaluations in his three graduate course offerings have been 4.67 and 4.30, respectively.

As context, Salvatore's overall instructor rating (undergraduate + graduate courses) is well above the five-year average for assistant professors in the Cockrell School of Engineering (4.28) and above the five-year average for assistant professors in CAEE (4.51). His instructor rating in CE329 is well above the five-year average for assistant professors in undergraduate courses in the CSE (4.20) and greater than that for every department in CSE, including CAEE, which had the highest average in the CSE (4.53). His mean instructor rating in his three graduate course offerings is above the CSE five-year average for assistant professors in graduate courses (4.41) and above the CAEE average for assistant professors in graduate courses (4.48). Salvatore's average overall instructor rating compares favorably with the eight most recent faculty members who were promoted from assistant to associate professor in CAEE (range = 3.99 to 4.77; average = 4.39). His average instructor score is just slightly below that of Paola Passalacqua and higher than Steve Boyles and Fernanda Leite, each of whom has received prestigious teaching awards. Salvatore's average overall instructor rating exceeds in-rank instructor evaluations of the five most recent CAEE faculty members promoted from associate professor to professor (range = 4.27 to 4.39; average = 4.32).

I reviewed CIS summaries and student comments for all of Salvatore's course offerings at UT. Student comments in CE329 were overwhelmingly positive. Many students referred to Salvatore as a (great, awesome, organized, engaging, fair, patient, caring, approachable, or best) professor. It is clear from student comments that Salvatore loves teaching, cares for students, and "gets it". A couple of students had minor constructive criticisms, e.g., "Occasionally you will say one unit when you mean another, but this is usually fixed fast," but these students still gave Salvatore very high overall marks as an instructor.

Salvatore also received generally very positive student comments in his graduate courses with superlatives consistent with, but less frequent than, those for his undergraduate courses. In *Probabilistic Analysis and Design* several students provided constructive criticism regarding a preference for more lab

demos and at least one hands-on lab, improvements in handwriting, distribution of slides before lecture, the need for graded project submissions, and a preference for delving deeper into more subjects.

Salvatore has received peer reviews of in-classroom teaching on two different occasions by me. Both were in CE329. Both reviews were positive and reflect an excellent, enthusiastic and energetic instructor. I took a few minutes at the end of each in-class review to speak with Salvatore's class in his absence. The students raved about Salvatore as a teacher, and that's not an understatement. Their positive comments were consistent with those expressed by students in their evaluations for CE329. I did make several observations to help Salvatore improve as a teacher, but these were generally minor. Salvatore is clearly one of the best teachers amongst young faculty members in CAEE.

Salvatore certainly *exceeds* the teaching expectations of an assistant (or associate or full) professor in CAEE.

### External Reviewers

In selecting external reviewers the CAEE aims for individuals who are internationally-recognized in a field that overlaps as much as possible with the promotion candidate under consideration. Our goal is to select reviewers from peer institutions, approximately defined as being from top 20 colleges of engineering and/or top 20 programs of relevance to the candidate's field, e.g., civil engineering. If possible, we try to obtain a letter from at least one member of the National Academy of Engineering (NAE). We attempt to avoid letters from two scholars from the same university. We also attempt to avoid having a large fraction of reviewers from private universities, which operate under different constraints than those of large public universities. This is what we aim for and often come very close to meeting. In narrow fields of study it is often difficult to find eight individuals to write letters given the intersection of constraints listed above. In Salvatore's case we did not request a letter from a member of the NAE, and had two reviewers from the University of Michigan, albeit in different departments.

External reviewers of Salvatore's promotion package included: Fu-Kuo Chang (Stanford University - Aeronautics and Astronautics), Charles Farrar (Los Alamos National Laboratory), Daniel Inman (University of Michigan - Aerospace Engineering), Cliff Lissenden (Penn State University - Engineering Science and Mechanics), Jerome Lynch (University of Michigan - Civil and Environmental Engineering + Electrical Engineering and Computer Science), Satish Nagarajaiah (Rice University - Civil and Environmental Engineering), Massimo Ruzzene (Georgia Institute of Technology - Aerospace and Mechanical Engineering), and Andrew Smyth (Columbia University - Civil Engineering and Engineering Mechanics). Reviewers are listed simply by *last name* throughout the remainder of this statement.

Of special note is the broad range of department affiliations represented by external reviewers. Salvatore's area of expertise is truly multi-disciplinary, spanning civil, aerospace, mechanical and electrical engineering. I also note that both Inman and Lynch are chairs of their respective departments at the University of Michigan, a peer public institution.

Reviewer comments are presented throughout the remainder of this statement.

### Research

Salvatore's research expertise relates to structural health monitoring (SHM) and non-destructive evaluation (NDE). His research spans fundamental to applied, combining various types of NDE methods (e.g., guided ultrasonic waves, acoustic emission, and vision-based inspection), and data processing techniques (e.g., probability-based, and time-frequency analysis).

Salvatore's stature in these areas is growing, but already significant, as described by several of his external reviewers:

"Despite his relatively young age, he is very well known in these fields at the national and international levels." (Chang)

"I would rank Dr. Salamone's quality of research at the highest level, comparable to that of most senior professors at other universities working in these fields." (Chang)

"The research of Dr. Salamone is clearly impacting the SHM community and the relevance of his work has been noticed by research agencies in the Defense as well as in the Civil Engineering sectors." (Chang)

"He clearly is an established and well-published researcher whose work has and continues to make a huge impact on the discipline. His research is forward thinking and first rate." (Inman)

"He has been very creative in using scientific tools such as the Heisenberg uncertainty principle, wavelet transforms, and fractals to advance the field of SHM." (Lissenden)

"Dr. Salamone's research at UT-Austin, UB and University of California at San Diego (UCSD) in ultrasonic sensing and wave propagation in SHM is of highest quality and has had significant national and international impact." (Nagarajaiah)

"Overall I would say that his work represents an outstanding balance of theoretical insight coupled with experimentation. His imaging study of cracking patterns and their connection to the underlying mechanics encapsulates this beautifully." (Smyth)

*Research Sponsorship:* Salvatore has proven that he can develop an independent and productive research program by actively seeking and securing research funding from a wide spectrum of sponsors. Sponsors have included federal agencies such as the National Science Foundation, Office of Naval Research, U.S. Department of Transportation, and the Pipeline and Hazardous Materials Safety Administration. He has also received funding from the Texas Department of Transportation, The New York State Pollution Prevention Institute, and the American Society of Nondestructive Evaluation. Looking forward, Salvatore plans on pursuing research funding from the US Department of Energy and the US Department of Homeland Security, amongst others.

Salvatore's career research funding is just shy of \$2 million, with just over 2/3 being Salvatore's share on 9 grants/contracts on which Salvatore has served as PI or Co-PI. This number does not include a small industry equipment donation of \$11,196 listed in his CV, but does include a \$100,000 grant from the SUNY Research Foundation. Importantly, Salvatore has served as PI on 8 of these 9 projects, and as sole-PI on six of the projects. In just two years at UT Salvatore has served as sole-PI on two grants (National Science Foundation and Office of Naval Research) and Co-PI on two others (Texas Department of Transportation), with total funding of \$1,498,898, of which \$906,497 is his share. This is an impressive start to his career at UT.

Several external reviewers commented on Salvatore's promise for future research:

"Based on the success that Professor Salamone has exhibited at both the University of Buffalo and the University of Texas, his academic future is certainly bright!" (Lissenden)

“This indicates to me two things: first, he is a versatile researcher who can adapt as funding trends evolve and second, a broad collection of stakeholders see tremendous value in Dr. Salamone’s work.” (Lynch)

“Also, the research proposals submitted by Prof. Salamone that I have evaluated while at NSF were generally well received by review panels, and were consistently in contention for funding. This speaks highly in favor of the ability of Prof. Salamone’s of writing compelling research proposals that are likely to receive support.” (Ruzzene)

“Professor Salamone brings a new perspective the civil engineering research that is well aligned with the NSF’s recent thrust in cyber-physicals systems (CPS) ..... I believe that he will continue to make significant contributions after this promotion has been awarded.” (Farrar)

*Scholarly Contributions:* Salvatore and his students have published their research findings in top journals in their field. He has published or had accepted for publication a total of 42 journal papers (9 in rank at UT) and 44 peer-reviewed papers in conference proceedings (six in rank at UT). Thirty of these publications have occurred in the seven years that Salvatore has served as an assistant professor at UB and UT, for an average of 4.3 journal articles/year. His average at UT in just two years is 4.5 journal articles/year. As some context, the number of journal articles per year while in rank for the past eight successful promotion cases by assistant professors in CAEE has ranged from 3/year to 6.3/year with an average of 4/year. Two of these eight were promoted after 2 years (Brady Cox) and 2 years + one semester (Navid Saleh) at UT. Each also had faculty positions for five years (Saleh – U of South Carolina) and six years (Cox – U of Arkansas) prior to joining UT. Saleh did a post-doc for 18 months prior to his first faculty position. Cox averaged 3 journal papers/year in his two years at UT. I now consider him to be a star amongst our associate professors with a very steep and positive trajectory. Saleh averaged 6.3 journal papers/year while in rank at UT and was just promoted to associate professor beginning fall 2017. He is by all accounts a “publishing machine” in a very hot field (engineered nanomaterials).

Salvatore’s career citations total 932 (Google Scholar), with an h-index of 17 (Google Scholar). For comparison, I reviewed citations and h-indices for the eight most recent CAEE faculty members who were promoted to associate professor. *This was done with full acknowledgement that both metrics should be higher for someone who has been in academia longer, that it is not correct to normalize by years given the non-linear growth of citations with time, and that citation counts differ significantly between fields.* Of these eight faculty members, five had served as assistant professor for five years at the time they submitted their promotion materials. Of this cohort the total number of citations (Google Scholar) ranged from 92 to 4,213 (see “publishing machine” above) with h-indices (Google Scholar) ranging from 6 to 23. Removing Saleh, the range is 92 to 349 citations (Google Scholar) and 6 to 12 for h-indices (Google Scholar). Salvatore’s citation count and h-index are also greater than those of two of the five most recent successful *associate to full promotion cases* in CAEE, and reasonably close to a third. From this analysis it is reasonable to conclude that Salvatore’s work is being well-cited and consistent with other successful faculty members in CAEE.

External reviewers commented not only on Salvatore’s significant publication record, but also on the quality of journals in which his papers are being published. For example:

“In his fields of choice, Prof. Salamone has published extensively, generally in the top journals for NDE and SHM research. These include *Ultrasonics*, *Structural Health Monitoring*, and *Smart Materials and Structures*.” (Ruzzene)



“The publication record of Dr. Salamone at this point of his career is impressive. ... His publications have appeared in excellent journals ....” (Chang)

Salvatore has delivered five invited seminars at other universities since joining UT.

By several metrics, Salvatore is highly-recognized in his field and is doing high quality research that is being published in high quality journals. He has a trajectory toward a highly sustainable and productive future as a researcher that *meets* or *exceeds* the norm in CAEE.

### **Advising**

Salvatore has sole-supervised six PhD students (3 at UT and 3 at UB) and is co-supervising a seventh at UT (3.5 total Ph.D. students in the pipeline at UT). His three PhD students at UB completed their degrees. Two of those assumed academic positions (New Mexico State University and Makerere University in Uganda). The third took a position in industry. Salvatore has also sole-supervised five M.S. students during his career. Four of these have completed their degrees (1 at UT and 3 at UB) and one is in the pipeline at UT. As described in his personal statement on Academic Advising, Counseling, and Other Student Services, Salvatore has established an excellent framework for mentoring graduate students, from regular team meetings, reports and presentations, to professional networking at annual conferences.

In addition to the graduate student supervision described above, Salvatore has served as research supervisor to three undergraduate students at UT and also supervised six undergraduate students while at the UB. Based on my conversations with Salvatore and his personal statement it seems clear that he genuinely enjoys involving undergraduate students in research and is a very good mentor to them.

As with most faculty members in CAEE, Salvatore engages in undergraduate student advising for course selection each fall and spring semester. Faculty in CAEE typically advise students for four to six hours each semester with the intent of helping students with selection of courses, answering questions that the students have about the profession or graduate school, and just getting to know the students as a prelude to future mentorship.

I consider Salvatore’s level of academic advising to meet the expectations of an assistant professor in CAEE.

### **Administrative and Committee Service**

*Departmental:* I became the Chair of CAEE shortly after leading an effort to develop a new strategic vision and plan. Knowing that strategic plans often become strategically placed in file cabinets never to be seen again, I decided to form a new committee named the Strategic Vision Implementation Committee (SVIC) with a mandate to “advance the CAEE strategic plan and vision.” I appointed primarily assistant and a few associate professors to the SVIC, as they were clearly the most excited about our new vision. One of those assistant professors was Salvatore, who served on the SVIC during his second year on our faculty. He was an active member of the SVIC during the past year, during which time the SVIC organized a series of evening events around the topic of Future Cities that was intended to provide cross-disciplinary pollination related to the topic. The SVIC invited faculty members from six different departments outside of the Cockrell School of Engineering to serve on discussion panels and to address questions from CAEE faculty and students.

Salvatore has also served on the CAEE Undergraduate Recruitment and Retention Committee. He currently co-chairs the Graduate Student Recruitment Committee for the structural engineering program in CAEE.

*Other UT:* To date, Salvatore has not engaged in significant service to the Cockrell School of Engineering or UT. I am confident that he will in the coming years.

Salvatore's service to CAEE and UT has been in the range of what is typical of assistant professors in CAEE. He meets expectations for an assistant professor, and will be asked to increase his service efforts in the coming years.

*Profession:* Salvatore has engaged in significant service to his profession. He is an active member of four professional societies of relevance to his expertise. He has organized sessions at several major international conferences and is currently on the organizing committee for an international workshop. He has reviewed proposals on 12 occasions for the National Science Foundation and federal agencies. He is on the editorial board of two journals and reviews approximately 15 journal articles per year.

*Community:* Salvatore has worked with four STEM teachers in Buffalo public schools, helping them to develop improved interdisciplinary science inquiry skills and knowledge.

Salvatore clearly meets expectations in terms of his service to profession and community.

### **Honors and Recognition**

Salvatore's publication record in high quality journals and his ability to secure research grants from a spectrum of sponsors are reflective of significant recognition that he is receiving in his field. The external letters for Salvatore's case are all positive, contain many superlatives, and also reflect the recognition that Salvatore is receiving from leaders in his field:

"Salvatore has clearly established himself as an international expert in the fields of SHM and NDE." (Chang)

"Professor Salamone has a proven track record of making creative and significant contributions to the field of structural health monitoring and NDE." (Farrar)

"That fact that he won [Achenbach Medal] at such an early stage of his career is a strong indication of the originality and importance of his work. It is also an indication that he is well above his cohorts within 10 years of their PhD working in the SHM area." (Inman)

"I can unequivocally state that he is an intrepid researcher who has amassed an illustrious record of pioneering research in the application of acoustic and ultrasonic stress waves to detect damage and deterioration in civil infrastructure systems." (Lynch)

"His work is revolutionary ..." (Lynch)

"His intellectual brilliance and creative research place him head and shoulders above almost all of his peers in the field currently at research-intensive institutions." (Lynch)

"It is clear from Salamone's accomplishments that he is well regarded in the broader field of Structural Health Monitoring." (Smyth)



"I would rank him amongst the top one percent of researchers worldwide at similar stage of their career in ultrasonic and wave propagation based SHM." (Nagarajaiah)

Salvatore's research has also been featured in the American Society of Civil Engineer's (ASCE) *Civil Engineering Magazine* and the *Engineering News-Record*.

Salvatore received the 2014 Achenbach Medal from the *Journal of Structural Health Monitoring*. This is an international award that recognizes someone who is within 10 years of completion of the Ph.D. degree who has made an outstanding contribution to the advancement of the field of structural health monitoring. Only one Achenbach Medal is given annually. In 2015, Salvatore also received the Outstanding Reviewer Award from the journal *Ultrasonics*. This award is given to a reviewer who provides exceptionally high quality feedback on a large number of papers.

As described in his personal statement, several graduate and undergraduate students on Salvatore's research team have also received honors that reflect positively on Salvatore's abilities as a mentor.

### Summary

Salvatore is already a very good teacher. His research efforts and scholarly contributions have also been excellent to date. His productivity and the quality of his work are exceptional and exceed expectations for an assistant professor in CAEE. Salvatore has a bright future, and I see him as a future leader in the structural engineering group in CAEE at UT. He is clearly very well respected by internationally-recognized leaders in his field at peer institutions and would be a strong case for promotion in peer programs as underscored by the following reviewer comments:

"...would be considered excellent for promotion to tenured Associate Professor at my institution, as well as in departments at other leading research universities." (Chang – Stanford University)

"I am extremely confident that Dr. Salamone would be easily promoted to Associate Professor with tenure at Michigan." (Lynch – University of Michigan)

"Based on my experience, I strongly believe that Prof. Salamone would be positively considered for promotion at my institution." (Ruzzene – Georgia Tech)

"I have been a referee in numerous successful cases for promotion with tenure (or similar rank) in the field of SHM for several top universities nationally and internationally, and I can say without a doubt that Dr. Salamone's accomplishments place him solidly in the upper tier of this group. I would therefore recommend him enthusiastically without reservation for tenure." (Smyth – Columbia)

In my opinion, Salvatore Salamone is highly deserving of promotion to associate professor and I endorse his case for promotion without qualification.



Richard L. Corsi, Ph.D., P.E.  
Department Chair and Joe J. King Chair in Engineering #2  
29 August 2017

Salvatore Salamone was scheduled to undergo third year review in 2017-18

Civil, Architectural, and Environmental Engineering

Revised September 23, 2017

**THE UNIVERSITY OF TEXAS**  
**Cockrell School of Engineering**  
**Standard Resume**

**FULL NAME:** Salvatore Salamone **TITLE:** Asst. Professor  
**DEPARTMENT:** Civil, Architectural, and Environmental Engineering  
**EID:** ss76649

**EDUCATION:**

- University of Palermo, Italy Civil Engineering Laurea (BS+MS) 2002
- University of Palermo, Italy Structural Engineering Ph.D. 2007
- University of California, San Diego Structural Engineering Postdoctoral studies 2007-2010

**CURRENT AND PREVIOUS ACADEMIC POSITIONS:**

- University at Buffalo, SUNY Assistant Professor Aug. 2010 – May 2015
- University of Texas at Austin Assistant Professor Aug. 2015 – present

**OTHER PROFESSIONAL EXPERIENCE:**

- University of California, San Diego Postdoctoral Fellow May 2007 – July 2010
- University of California, San Diego Visiting Scholar Oct. 2005 – Sept. 2006

**HONORS AND AWARDS:**

- 2015 Outstanding reviewer for the Journal of Ultrasonics
- 2014 ASNT Robert B. Oliver scholarship (as advisor) (An award given to an undergraduate student who has submitted the most outstanding manuscript on nondestructive testing research)
- 2014 Achenbach Medal from the Journal of Structural Health Monitoring (An international award that recognizes an individual who, within 10 years of Ph.D., has made an outstanding contribution to the advancement of the field of structural health monitoring)
- 2012 Best paper award (as advisor, and co-author), The 54th Acoustic Emission Working Group Meeting, Princeton, New Jersey
- 2011 American Society for Nondestructive Testing (ASNT), faculty grant award
- 2011 NSF travel award for Junior Faculty, to attend the Wind Energy Research Workshop, University of Massachusetts Lowell

**MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:**

- Society of Experimental Mechanics (SEM)
- American Society of Civil Engineers (ASCE)
- Acoustical Society of America (ASA)
- American Society for Nondestructive Testing (ASNT)

**UNIVERSITY COMMITTEE ASSIGNMENTS:****University of Texas at Austin:**

Departmental	Co-Chair, structures group graduate recruitment	2016-present
	Member, strategic vision implementation committee	2016-present
	Member, distinguished lecture series committee	2015-present
	Member, undergraduate recruiting and retention committee	2015-2016

**University at Buffalo:**

Departmental	Member, undergraduate studies committee	2013-2015
	Member, search committee for faculty in materials	2013-2014
	Member, graduate admission committee	2011-2015
	Member, bridge engineering program steering committee	2011-2014
College	Member, of the faculty-freshman mentor program (EAS 202)	2011-2014

**PROFESSIONAL REGISTRATION:**

- Engineer-in-Training, California (2009)
- Italian Professional Engineer (Dec. 2002)

**CONSULTING:**

- Avanti-Tech, San Diego Jan. 2008 – Aug. 2009
- Avanti-Tech, San Diego Sept. 2010 – Aug. 2011

**PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:**

- **Reviewer for the following peer-reviewed journals** (Total of 45 different peer-review journals): Intelligent Material Systems and Structures, Structural Health Monitoring, Journal of Solids and Structures, Journal of Bridge Engineering, Journal of Structural Engineering, Ultrasonics, Mechanical Systems and Signal Processing, Journal of Pressure Vessel Technology, Structural Control and Health Monitoring, Nondestructive Testing and Evaluation, NDT & E International, IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control, Mathematical Problems in Engineering, Smart Materials and Structures, Sensors, Composites Part B, Research in Nondestructive Evaluation, Measurement, Experimental Techniques, Experimental Mechanics, Construction and Building Materials, Smart Structures and Systems, Journal of Materials in Civil Engineering, Journal of Infrastructure Systems, Structural Monitoring and Maintenance: an International Journal, Journal of Nondestructive Evaluation, Philosophical Transactions A, Measurement Science and Technology, International Journal of Concrete Structures and Materials, Proceedings of the IEEE, International Journal of Fracture, Journal of Civil Structural Health Monitoring, Transportation Research Part C, Journal of Engineering Mechanics, Engineering Structures, Journal of Computational Methods in Sciences and Engineering, KSCE Journal of Civil Engineering, Earthquake Spectra, Materials, Automation in Construction, The Journal of the Acoustical Society of America, Scientific Reports, Journal of Vibration and Acoustics, CRC press (2 book chapters), Elsevier press (1 book).
- **Reviewer for the following funding agencies:** US National Science Foundation, programs: Hazard Mitigation and Structural Engineering (2010), Sensor and Sensing Systems (2010, 2011, 2013), Atmospheric and Geospace Sciences (2013); Chilean National Science Foundation (FONDECYT) (2012), U.S. Department of Transportation - Pipeline & Hazardous Materials Safety Administration (PHMSA) (2012, 2015, 2016), South Africa's National Research Foundation (NRF) (2012), Kentucky

Civil, Architectural, and Environmental Engineering

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Science and Engineering Foundation (2013), South Carolina Space Grant & South Carolina NASA EPSCoR (2015), Department of Energy: SBIR-STTR (2016, 2017), NEUP (2017).

- **Editorial Board:**
  - Structural Monitoring and Maintenance: An International Journal (01/2013-present)
  - Acoustics (01/2017-present)
  - Mathematical Problems in Engineering (06/2017-present)
- **Special Issue Guest Editor:**
  - Journal of Sensors (2013)
  - International Journal of Corrosion (2015)
- **Technical Committees:**
  - ASCE Structural Health Monitoring and Control (2012-present)
  - ASCE Methods of Monitoring Structural Performance (2013-present)
  - ASME Ultrasonics for Mechanical Systems (2014-present)
- **Conference Organization Committees:**
  - Member of the international organizing committee at *10<sup>th</sup> International Workshop on Structural Health Monitoring*, September 12-14, 2017, Stanford University, CA
- **Symposium/conference chair:**
  - University of Texas at Austin
    - SHM/NDE for Civil Infrastructures, *10<sup>th</sup> International Workshop on Structural Health Monitoring*, September 2015, Stanford University, CA.
    - Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, *SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring*, March 25-29, 2017, Portland, OR.
    - SHM/NDE for Civil Infrastructures: Recent Developments and Challenges, *10<sup>th</sup> International Workshop on Structural Health Monitoring*, September 12-14, 2017, Stanford University, CA.
  - University at Buffalo
    - Ultrasonic Guided Wave Propagation for SHM of Engineering Structures, *5<sup>th</sup> European Workshop on Structural Health Monitoring*, June 28 -July 2, 2010, Sorrento, Italy.
    - Innovation in Structural Health Monitoring (ISHM): Current Trends and Applications, *11<sup>th</sup> International Conference on Structural Safety & Reliability*, June 16-20, 2013, Columbia University, NY.
    - SHM/NDE for Civil Infrastructures: Recent Developments and Challenges *9<sup>th</sup> International Workshop on Structural Health Monitoring*, September 10-12, 2013, Stanford University, CA.
- **Special Session Organizer:**
  - University of Texas at Austin
    - Guided Ultrasonic Waves in Structures for NDE and SHM, *ASME IMECE Conference*, November 2016, Phoenix, AZ.
    - SHM/NDE for Civil Infrastructures: Recent Developments and Challenges, *10<sup>th</sup> International Workshop on Structural Health Monitoring*, September 12-14, 2017, Stanford University, CA.
  - University at Buffalo
    - Innovation in Structural Health Monitoring (ISHM): Current Trends and Applications, *11<sup>th</sup> Edition ICOSAR*, June 16-20, 2013, Columbia University, NY.
    - SHM/NDE for Civil Infrastructures: Recent Developments and Challenges, *9<sup>th</sup> International Workshop on Structural Health Monitoring*, September 10-12, 2013, Stanford University, CA.

- SHM/NDE for Civil Infrastructures, *10<sup>th</sup> International Workshop on Structural Health Monitoring*, September 2015, Stanford University, CA.

## PUBLICATIONS:

According to Google Scholar (last date accessed 06/11/2017): Citations for 'Salvatore Salamone': 932, H-Index: 17; (Underlined names denote students under my direct supervision).

### A. Refereed Archival Journal Publications (in print or accepted, 42):

#### In Rank (assistant professor at UT)

- [UT-01] Farhidzadeh, A., Epackachi, S., Salamone, S., Whittaker, A., (2015). "Bayesian decision and mixture models for AE monitoring steel-concrete composite shear walls", *Smart Materials and Structures*, Vol. 24, 115018, 11 pp.
- [UT-02] Ercolino M., Farhidzadeh, A., Salamone, S., Magliulo, G., (2015). "Detection of onset of failure in prestressed strands by cluster analysis of acoustic emissions", *Structural Monitoring and Maintenance: an international journal*, Vol.2 (4), pp.339-355.
- [UT-03] Ebrahimkhanlou, A., Farhidzadeh, A., Salamone, S., (2016). "Multifractal analysis of crack patterns in reinforced concrete shear walls", *Structural Health Monitoring*, Vol. 15(1), pp.81-92.
- [UT-04] Matovu, M., Farhidzadeh, A., Salamone, S., (2016). "Damage assessment of steel-plate concrete composite walls by using infrared thermography: a preliminary study", *Journal of Civil Structural Health Monitoring*, Vol. 6 (2), pp.303-313.
- [UT-05] Dehghan Niri, E., Salamone, S., (2016). "Quantitative corrosion imaging of pipelines using multi helical guided ultrasonic waves", *Structural Monitoring and Maintenance: an international journal*, Vol. 3 (3), pp.215-232.
- [UT-06] Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2016). "Damage localization in metallic plate structures using edge-reflected lamb waves", *Smart Materials and Structures*, Vol. 25, 085035, 13 pp.
- [UT-07] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). "Effect of pressurization on helical guided wave energy velocity in fluid-filled pipes", *Ultrasonics*, Vol. 75, pp.145-154.
- [UT-08] Ebrahimkhanlou, A., Salamone, S., (2017). "Acoustic emission source localization in thin metallic plates: a single-sensor approach based on edge reflections", *Ultrasonics*, Vol. 78, pp. 134-145.
- [UT-09] Ebrahimkhanlou, A., Salamone, S., (2017). "A probabilistic framework for single-sensor acoustic emission source localization in thin metallic plates", *Smart Material and Structures*, Vol. 26, 095026, 19 pp.

#### Refereed Journal Articles (submitted at UT) under review:

- [UT-10] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). "Localization of multiple acoustic emission events occurring closely in time using sparse reconstruction", *Structural Health Monitoring*, under review.
- [UT-11] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). "The effect of applied stress on the phase velocity of guided waves in anisotropic composite plates", *Journal of Acoustical Society of America*, under review.

**In Rank (assistant professor at University at Buffalo):**

- [UB-01] Coccia, S., Bartoli, I., Marzani, A., Lanza di Scalea, F., Salamone, S., Fateh, M., (2011). "Numerical and experimental study of guided waves for detection of defects in the rail head", *NDT&E International*, Vol. 44(1), pp. 93–100.
- [UB-02] Coccia, S., Phillips, R., Bartoli, I., Salamone, S., Lanza di Scalea, F., Fateh, M., Carr, G., (2011). "Noncontact ultrasonic guided-wave system for rail inspection", *Journal of the Transportation Research Record*, Vol. 2261, pp. 143–147
- [UB-03] Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Lanza di Scalea, F., (2011). "Health monitoring of prestressing tendons in post-tensioned concrete bridges", *Journal of the Transportation Research Record*, Vol. 2220, pp. 21–27.
- [UB-04] Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., (2011). "Use of interwire ultrasonic leakage to quantify loss of prestress in multiwire tendons", *Journal of Engineering Mechanics*, Vol. 137(5), pp. 324–334.
- [UB-05] Salamone, S., Veletzis, M.J., Lanza di Scalea, F., Restrepo, J.I., (2012). "Detection of initial yield and onset of failure in bonded post-tensioned concrete beams", *Journal of Bridge Engineering*, Vol. 17(6), pp. 966-974 (SPECIAL ISSUE: Nondestructive Evaluation and Testing for Bridge Inspection and Evaluation).
- [UB-06] Marzani, A., Salamone, S., (2012). "Numerical prediction and experimental verification of temperature effect on plate waves generated and received by piezoceramic sensors", *Mechanical Systems and Signal Processing*, Vol.30, pp. 204-217.
- [UB-07] Moustafa, A., Salamone, S., (2012). "Fractal dimension based Lamb wave tomography algorithm for damage detection in plate-like structures", *Journal Intelligent Material Systems & Structures*, Vol. 23, pp. 1269-1276.
- [UB-08] Dehghan Niri, E., Salamone, S., (2012). "A probabilistic framework for acoustic emission source localization in plate-like structures", *Smart Materials and Structures*, Vol. 21(3), 035009, 16 pp.
- [UB-09] Dehghan Niri, E., Salamone, S., (2012). "Passively tunable mechanism for dual bimorph energy harvester with variable tip stiffness and axial load", *Smart Materials and Structures*, Vol. 21(12), 125025, 15 pp.
- [UB-10] Farhidzadeh, A., Dehghan Niri, E., Salamone, S., Luna, B., Whittaker, A., (2013). "Monitoring crack propagation in reinforced concrete shear walls by acoustic emission", *Journal of Structural Engineering*, Vol. 139(12), 04013010.
- [UB-11] Farhidzadeh, A., Salamone, S., Luna, B., Whittaker, A., (2013). "Acoustic emission monitoring of a reinforced concrete shear wall by b-value based outlier analysis", *Structural Health Monitoring*, Vol. 12(1), pp. 3-13.
- [UB-12] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2013). "Adaptive multisensor data fusion for acoustic emission (AE) source localization in noisy environment", *Structural Health Monitoring*, Vol. 12(1), pp.59-77.
- [UB-13] Farhidzadeh, A., Salamone, S., Singla, P., (2013). "A probabilistic approach for damage identification a crack mode classification in reinforced concrete structures", *Journal Intelligent Material Systems & Structures*, Vol. 24(14), pp.1722-1735.
- [UB-14] Farhidzadeh, A., Dehghan Niri, E., Moustafa, A., Salamone, S., Whittaker, A., (2013). "Damage assessment of reinforced concrete structures using fractal analysis of residual crack patterns", *Experimental Mechanics*, Vol. 53(9), pp. 1607-1619.



- [UB-15] Lanza di Scalea, F., Rizzo, P., Salamone, S., Bartoli, I., Al-Nazer, L., (2013). "Ultrasonic tomography for three-dimensional imaging of internal rail flaws: proof-of-principle numerical simulations", *Journal of the Transportation Research Board*, Vol.2374, pp.162-168.
- [UB-16] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2014). "Nonlinear kalman filtering for acoustic emission source localization in anisotropic panels", *Ultrasonics*, Vol. 54(2), pp. 486-501.
- [UB-17] Moustafa, A., Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2014). "Corrosion monitoring of post-tensioned concrete structures using fractal analysis of guided ultrasonic waves", *Structural Control and Health Monitoring*, Vol. 21(3), pp. 438-448.
- [UB-18] Farhidzadeh, A., Dehghan Niri, E., Zhong, Z., Salamone, S., Aref, A., Filiatrault, A., (2014). "Post-earthquake evaluation of pipelines rehabilitated with cured in place lining technology using acoustic emission", *Construction & Building Materials*, Vol.54, pp.326-338.
- [UB-19] Dehghan Niri, E., Salamone, S., (2015). "A multi-helical ultrasonic imaging approach for the structural health monitoring of cylindrical structures", *Structural Health Monitoring*, Vol. 14(1), pp.73-85.
- [UB-20] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2015). "Determination of the probability zone for acoustic emission source location in cylindrical shell structures", *Mechanical Systems and Signal Processing*, Vol. 60, pp. 971-985.
- [UB-21] Farhidzadeh, A., Salamone, S., (2015). "Reference-free corrosion damage diagnosis in steel strands using guided ultrasonic waves", *Ultrasonics*, Vol. 57(3), pp.198-208.

#### **Graduate and Postdoctoral Training:**

- [GP-01] Bilello, C., Di Paola, M., Salamone, S., (2005). "A correction method for dynamic analysis of linear continuous systems", *Computer and Structures*, Vol. 83, pp. 662–670.
- [GP-02] Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Coccia, S., Sikorsky, C., (2008). "Monitoring pre-stress level in seven wire prestressing tendons by inter wire ultrasonic wave propagation", *Journal of Advances in Science and Technology—Embodying Intelligence in Structures and Integrated Systems*, Vol. 56, pp. 200–205.
- [GP-03] Salamone, S., Bartoli, I., Lanza di Scalea, F., Coccia, S., (2008). "Temperature effect on guided wave based macrofiber composite transduction", *Materials Evaluation*, Vol. 66(10), pp. 1071–1076.
- [GP-04] Lanza di Scalea, F., Salamone, S., (2008). "Temperature effects in ultrasonic Lamb wave structural health monitoring systems", *Journal of the Acoustical Society of America*, Vol. 124(1), pp. 161–174.
- [GP-05] Cottone, G., Pirrotta, A., Salamone, S., (2008). "Incipient damage identification through characteristics of the analytical signal response", *Structural Control and Health Monitoring*, Vol. 15(8), pp. 1122-1142.
- [GP-06] Bilello, C., Di Paola, M., Salamone, S., (2008). "A correction method for the analysis of continuous linear one-dimensional systems under moving loads", *Journal of Sound and Vibration*, Vol. 315, pp. 226–238.
- [GP-07] Coccia, S., Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Fateh, M., (2009). "Non-contact ultrasonic guided wave detection of rail defects", *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2117, pp. 77–84.
- [GP-08] Salamone, S., Fasel, T., Bartoli, I., Srivastava, A., Lanza di Scalea, F., Todd, M., (2009). "Health monitoring approach for adhesively bonded joints", *Materials Evaluation*, Vol. 67(7), pp. 828–836 (invited).

- [GP-09] Salamone, S., Lanza di Scalea, F., Bartoli, I., Coccia, S., (2009). "Guided-wave health monitoring of aircraft composite panels under changing temperature", *Journal of Intelligent Material Systems and Structures*, Vol. 20(9), pp. 1079–1090.
- [GP-10] Rizzo, P., Cammarata, M., Bartoli, I., Lanza di Scalea, F., Salamone, S., Coccia, S., and Phillips, R., (2010). "Ultrasonic guided waves-based monitoring of rail head: laboratory and field tests", *Advances in Civil Engineering*, Vol.2010 (ID.291293).
- [GP-11] Srivastava, A., Bartoli, I., Salamone, S., Lanza di Scalea, F., (2010). "Higher harmonic generation in nonlinear waveguides of arbitrary cross-section", *Journal of the Acoustical Society of America*, Vol. 127(5), pp. 2790–2796.
- [GP-12] Salamone, S., Bartoli, I., Di Leo, P., Lanza di Scalea, F., Ajovalasit, A., D'Acquisto, L., Rhymer, J., Kim, H., (2010). "High velocity impact location on aircraft panels using macro fiber composite piezoelectric rosettes", *Journal of Intelligent Material Systems and Structures*, Vol. 21(9), pp. 887–896.

## **B. Refereed Conference Proceedings:**

### **In Rank (assistant professor at UT)**

- [UT-01] Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2015). "Damage localization in plate-like structures using guided ultrasonic waves edge reflections", *Proceedings of the 10th International Workshop Structural Health Monitoring*, ed. F-K. Chang, Stanford, CA, September 1–3, pp. 2624-2633.
- [UT-02] Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2016). A guided ultrasonic imaging approach in isotropic plate structures using edge reflections", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Las Vegas, NV, March 8-12.
- [UT-03] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2016). "Helical guided waves in liquid-filled cylindrical shells subjected to static pressurization stress", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Las Vegas, NV, March 8-12.
- [UT-04] Ebrahimkhanlou, A., Salamone, S., (2017). "Probabilistic location estimation of acoustic emission sources in isotropic plates with one sensor", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Portland, OR, March 25-29, doi: 10.1117/12.2258618.
- [UT-05] Ebrahimkhanlou, A., Salamone, S., (2017). "A Probabilistic model for visual inspection of concrete shear walls", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Portland, OR, March 25-29, doi: 10.1117/12.2258614.
- [UT-06] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). "Sparse reconstruction localization of multiple acoustic emissions in large diameter pipelines", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Portland, OR, March 25-29, 10.1117/12.2257505.

### **In Rank (assistant professor at the University at Buffalo)**

- [UB-01] Salamone, S., Bartoli, I., Rhymer, J., Lanza di Scalea, F., Kim, H., (2011). "Validation of the piezoelectric rosette technique for locating impacts in complex aerospace panels", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Vol. 7984: 79841E.

- [UB-02] Bartoli, I., Castellazzi, G. Marzani, A., Salamone, S., (2012). "Prediction of stress waves propagation in progressively loaded seven wire strands", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, <http://dx.doi.org/10.1117/12.915297>.
- [UB-03] Dehghan Niri, E., Salamone, S., Singla, P., (2012). "Acoustic emission (AE) source localization using extended kalman filter (EKF)", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, <http://dx.doi.org/10.1117/12.914848>.
- [UB-04] Farhidzadeh, A., Salamone, S., Dehghan-Niri, E., Luna, B., Whittaker, A., (2012). "Assessment of reinforced concrete shear walls by acoustic emission", CDROM *Proceedings of NDE/NDT for Highways and Bridges: Structural Materials Technology (SMT)*, New York, New York, USA, pp. 74-81.
- [UB-05] Lanza di Scalea, F., Kim, H., White, S., Chen, Z.M., Salamone, S., Bartoli, I. (2013). "Impact monitoring in aerospace panels via piezoelectric rosettes", *Composite Materials and Joining Technologies for Composites; Proceedings of Society of Experimental Mechanics*, Costa Mesa, CA, Vol.7, pp. 207-213.
- [UB-06] Farhidzadeh, A., Salamone, S., Singla, P., (2013). "Gaussian mixture modeling of acoustic emissions for structural health monitoring of reinforced concrete structures" *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, 86920B (April 19, 2013); doi:10.1117/12.2008705.
- [UB-07] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2013). "Adaptive unscented kalman filter (UKF) for acoustic emission (AE) source localization in noisy environment" *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, 869518, doi: 10.1117/12.2008617.
- [UB-08] Farhidzadeh, A., Dehghan Niri, E., Salamone, S., (2013). "Crack pattern quantification of concrete structures based on fractal analysis" *Proceedings of the 11th International Conference on Structural Safety & Reliability*", pp. 361-366.
- [UB-09] Farhidzadeh, A., Dehghan Niri, E., Salamone, S., (2013). "Crack pattern quantification for advanced visual inspection of concrete structures", *Proceedings of the 9th International Workshop Structural Health Monitoring*, ed. F.-K. Chang, Stanford, CA, September 10–13, pp. 2523-2532.
- [UB-10] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2013). "Acoustic emission source localization in anisotropic structures through nonlinear kalman filtering estimation" *Proceedings of the 9th International Workshop Structural Health Monitoring*, ed. F-K. Chang, Stanford, CA, September 10–13, pp. 2624-2633.
- [UB-11] Farhidzadeh, A., Ebrahimkhanlou, A., Salamone, S., (2014). "A vision-based technique for damage assessment of reinforced concrete structures" *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, 90642H, doi: 10.1117/12.2044875.
- [UB-12] Farhidzadeh, A., Dehghan Niri, E., Salamone, S., (2014). "Structural health monitoring of pipelines rehabilitated with lining technology" *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, 90641M, doi: 10.1117/12.2044877.
- [UB-13] Ebrahimkhanlou, A., Farhidzadeh, A., Salamone, S., (2015). "Multifractal analysis of two-dimensional images for damage assessment of reinforced concrete structures", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, San Diego, CA, March 8-12.

- [UB-14] Dubuc, B., Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2015). "Multi-helical ultrasonic imaging for corrosion monitoring of cylindrical structures", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, San Diego, CA, March 8-12.
- [UB-15] Farhidzadeh, A., Salamone, S., (2015). "Nondestructive evaluation of corrosion in prestressed strands using guided ultrasonic waves", *Proceedings of the 4<sup>th</sup> International Conference on Bridges (4IBC2015)*, Tehran, Iran, January 24-26, pp. 1-7.
- [UB-16] Farhidzadeh, A., Salamone, S., (2015). "Corrosion damage estimation in multi-wire steel strands using guided ultrasonic waves", *Proceedings of SPIE's: Structural Health Monitoring and Inspection of Advanced Materials, Aerospace, and Civil Infrastructure*, Vol. 9437, doi: 10.1117/12.2084053.

#### **Graduate and Postdoctoral Training:**

- [GP-01] Matt, H., Bartoli, I., Salamone, S., Rizzo, P., Lanza di Scalea, F., Park, G. and Farrar, C., "Automated damage detection in UAV wing skin-to-spar joints based on outlier analysis of guided wave energy, (2006). ", *Proceedings of 3rd European Workshop on Structural Health Monitoring*, A. Gumes, ed., Granada, Spain, July 5–7, pp. 1012–1019.
- [GP-02] Salamone, S., Bartoli, I., Lanza di Scalea, F., Coccia, S., (2008). "Structural health monitoring of adhesively bonded components in aerospace structures: temperature effect on guided wave based macro-fiber composite transduction and damage detection", *Proceedings of ASNT Research Symposium and Spring Conference*, Anaheim, CA, March-April 2008, pp. 172-179.
- [GP-03] Bartoli, I., Phillips R., Salamone, S., Lanza di Scalea, F., Sikorsky C., (2008). "Load monitoring in multi-wire strands by inter-wire ultrasonic measurements", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace System*, Vol. 6932, pp: 693209-693209-12.
- [GP-04] Salamone, S., Lanza di Scalea, F., (2009). "Temperature effects in Lamb wave structural health monitoring systems", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace System*, Vol. 7295, pp: 72950O–72950O–11.
- [GP-05] Bartoli, I., Nucera, C., Srivastava, A., Salamone, S., Phillips R., Lanza di Scalea, F., Coccia, S., Sikorsky C., (2009). "Nonlinear ultrasonic guided waves for stress monitoring in prestressing tendons for post-tensioned concrete structures", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace System*, Vol. 7292, pp: 729220 –729220–11.
- [GP-06] Bartoli, I., Nucera, C., Salamone, S., Srivastava, A., Phillips R., Lanza di Scalea, F., Sikorsky C., Coccia, S., (2009). "Stress monitoring in prestressing tendons for post-tensioned concrete structures by nonlinear ultrasonic guided waves", *Proceedings 7th International Workshop Structural Health Monitoring*, ed. F.-K. Chang, Stanford, CA, September 9–11, Vol. 2, pp: 2115 –2122.
- [GP-07] Srivastava, A., Bartoli, I., Salamone, S., Lanza di Scalea, F., (2009). "Behavior of nonlinear higher harmonics in plate and rod guided waves", *Proceedings 7<sup>th</sup> Int. Workshop on Structural Health Monitoring*, ed. F.-K. Chang, Stanford, CA, September 9–11.
- [GP-08] Coccia, S., Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Fateh, M., Carr, G., (2009). "Non-contact ultrasonic guided wave detection of rail defects. Prototype development and field testing for the Federal Railroad Administration", *Proceedings 7th International Workshop Structural Health Monitoring*, ed. F.-K. Chang, Stanford, CA, September 9–11, Vol. 1, pp: 255–262.

- [GP-09] Bartoli, I., Salamone, S., Di Leo, P., Mezzanotte, M., Lanza di Scalea, F., Kim K., Rhymer, J., Phillips, R., Ajovalasit, A., D'Acquisto, L., (2009). "Impact force identification and damage location on ship and aircraft panels", *Proceedings 7<sup>th</sup> Int. Workshop on Structural Health Monitoring*, ed. F.-K. Chang, Stanford University, September 9–11.
- [GP-10] Coccia, S., Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Fateh, M. and Carr, G., (2009). "Noncontact ultrasonic guided-wave detection of rail defects", *Proceedings of the Joint International Light Rail Conference: Growth and Renewal*, April 19–21, Los Angeles, California, #01206828, pp: 285–296.
- [GP-11] Marzani, A., Bocchini, P., Viola, E., Bartoli, I., Coccia, S., Salamone, S., Lanza di Scalea, F., (2009). "A software for the computation of acoustic waves in cylindrical, plate and arbitrary cross-section waveguides", *Proceedings*, Associazione Italiana Prove non Distruttive - AIPND, , pp. CDId57-1 - CDId57-6, Rome, Italy, 15–17 October.
- [GP-12] Bartoli, I., Coccia, Phillips, R., Srivastava, A., Lanza di Scalea, F., S., Salamone, S., Fateh, M., Carr, G., (2010). "Stress dependence of guided waves in rails", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Vol. 7650: 765021.
- [GP-13] Bartoli, I., Salamone, S., Mezzanotte, M., Lanza di Scalea, F., Kim, K., Rhymer, J., (2010). "Impact force identification on isotropic and composite panels", *Proceedings of SPIE's: The International Society for Optical Engineering*, Vol.7650: 765007.
- [GP-14] Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Srivastava, A., Lanza di Scalea, F. and Sikorsky, C., (2010). "Stress monitoring by ultrasonic guided waves in prestressing tendons for post-tensioned concrete structures", *Proceedings of 5th European Workshop on Structural Health Monitoring*, Fabio Casciati and Michele Giordano, ed., Sorrento, Italy, June 29–July 4, ISBN: 978-1-60595-024-2.
- [GP-15] Bartoli, I., Marzani, A., Phillips, R., Coccia, S., Lanza di Scalea, F., Salamone, S., Fateh, M., Carr, G., (2010). "Ultrasonic guided waves in continuously welded rails for buckling prediction", *Proceedings of 5th European Workshop on Structural Health Monitoring*, Fabio Casciati and Michele Giordano, ed., Sorrento, Italy, June 29–July 4, ISBN: 978-1-60595-024-2, pp: 6.
- [GP-16] Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Lanza di Scalea, F., Sikorsky, C., Tamutus, T., (2010). "Health monitoring of prestressing tendons in post-tensioned concrete structures", CDROM *Proceedings of NDE/NDT for Highways and Bridges: Structural Materials Technology (SMT)*, New York, pp. 401-408, August 16-20, 2010.
- [GP-17] Nucera, C., Salamone, S., Bartoli, I., Phillips, R., Lanza di Scalea, F. and Sikorsky, C., "Nonlinear ultrasonic guided waves for stress monitoring in prestressing tendons for post-tensioned concrete structures," CD-ROM *Proceedings of the ASNT Conference on NDE/NDT for Highways and Bridges: Structural Materials Technology*, New York, NY, pp. 409-417, August 16-20, 2010.
- [GP-18] Lanza di Scalea, F., Salamone, S., Bartoli, I., Kim, H., and Rhymer, J., "Location and identification of impact forces in composite aerospace panels, (2011)." *Proceedings of the 40th National Conference of the Italian Association for Stress Analysis (AIAS)*, Palermo, Italy, September 7-10, 2011.
- [GP-19] Coccia, S., Phillips, R., Nucera, C., Bartoli, I., Salamone, S., Lanza di Scalea, F., Fateh, M. and Carr, G., (2011). "Ultrasonic guided-wave defect detection system for rails," *Proceedings of American Railway Engineering and Maintenance-of-Way Association (AREMA) Annual Conference*, Minneapolis, MN, September 18-21, 2011.



- [GP-20] Coccia, S., Phillips, R., Bartoli, I., Salamone, S., Lanza di Scalea, F., Fateh, M., Carr, G., (2011). "UCSD/FRA non-contact ultrasonic guided wave system for rail inspection: an update", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Vol. 7981: 798113.
- [GP-21] Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Lanza di Scalea, F., (2011). "Health monitoring of prestressing tendons in post-tensioned concrete structures", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems*, Vol. 7981: 798122.
- [GP-22] Bartoli, I., Salamone, S., Rhymmer, J., Lanza di Scalea, F., Kim, H., (2011). "Impact force identification in aerospace panels by an inverse ultrasonic guided wave problem", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Vol. 7984: 79841F.

**C. Non-Refereed Conference Proceedings (includes papers not required or not submitted):**

**In Rank (assistant professor at UT)**

- [UT-01] Ebrahimkhanlou, A., Salamone, S., (2016). "An acoustic emission source localizer in plate structures using edge reflections". Acoustic Emission Working Group Meeting 58th, Philadelphia, PA (**Honorable Mention**).
- [UT-02] Ebrahimkhanlou, A., A., Salamone, S., (2016) "Introducing Bayesian network for probabilistic damage quantification of concrete shear walls based on visual inspection", *Proceedings of ASNT research symposium*, 11-14 April, New Orleans.
- [UT-03] Ebrahimkhanlou, A., A., Salamone, S., (2016) "An acoustic emission source localizer in isotropic plate structures using edge reflections", *Proceedings of ASNT research symposium*, 11-14 April, New Orleans.
- [UT-04] Dubuc, B., Ebrahimkhanlou, A., A., Salamone, S., (2016) "Helical guided ultrasonic waves for pipeline structural health monitoring" *Proceedings of ASME, Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS)*, September 28-30, Stowe Mountain, VT.
- [UT-05] Ebrahimkhanlou, A., A., Salamone, S., (2016) "A model-based guided ultrasonic imaging and acoustic emission source localization in isotropic plate structures using edge reflections", *Proceedings of ASME, International Mechanical Engineering Congress and Exposition*, November 11-17, Phoenix, AZ.
- [UT-06] Ebrahimkhanlou, A., A., Salamone, S., (2017) "A probabilistic, single-sensor approach for acoustic emission source localization in metallic plates", *Proceedings of ASNT research symposium*, March 13-16, Jacksonville, FL.

**In Rank (assistant professor at the University at Buffalo)**

- [UB-01] Coccia, S., Phillips, R., Bartoli, I., Salamone, S., Lanza di Scalea, F., Fateh, M., Carr, G., (2011). "UCSD/FRA non-contact ultrasonic guided wave system for rail inspection: an update", CD-ROM *Proceedings of the 90th Annual Meeting of the Transportation Research Board*, Washington, DC, January 2011.
- [UB-02] Farhidzadeh, A., Salamone, S., (2012). "Introducing sifted b-value analysis and a new crack classification for monitoring reinforced concrete shear walls by acoustic emission". Acoustic Emission Working Group Meeting 54th, Princeton, NJ. (**Best Paper Award**).
- [UB-03] Dehghan Niri, E., Salamone, S., (2012). "Probabilistic approach to Acoustic Emission (AE) source location and wave velocity estimation in isotropic plate like structures", *Proceedings of ASNT Spring Symposium and Research Conference*, Dallas, TX, 19-23 Mar. 2012.

- [UB-04] Maviga, T., Farhidzadeh, A., Salamone, S., (2013). "Guided ultrasonic waves for corrosion monitoring of civil infrastructures", 19<sup>th</sup> Annual McNair Research Conference, Louis Stokes Alliances for Minority Participation (LSAMP) program, 11-13 July 2013, Conference Center Niagara Falls, NY, poster presentation (1<sup>st</sup> prize winner).
- [UB-05] Dehghan Niri, E., Farhidzadeh, A., Mustafa, A., Salamone, S., Zhong, Z., Aref, A., Filiatrault, A., (2014). "Post-earthquake assessment of rehabilitated pipelines using guided ultrasonic waves (GUWs), *Proceedings of 22<sup>nd</sup> ASNT annual research symposium*, 19-21 March 2013, Memphis, Tennessee, USA.
- [UB-06] Farhidzadeh, A., Dehghan Niri, E., Salamone, S., (2013). "Introducing vision-based damage for quantification of cracks pattern in concrete structures", *Proceedings of 22<sup>nd</sup> ASNT annual research Symposium*, 19-21 March 2013, Memphis, Tennessee, USA.
- [UB-07] Farhidzadeh, A., Salamone, S., (2014). "Intelligent structures, prospects of safe and reliable structures", 2013 EERI annual meeting, Building Resilient Communities through Policy and Mitigation, 12-15 February 2013, Seattle, WA, USA.
- [UB-08] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2014). "Multi-mode (passive-active) real time corrosion and leak monitoring of cylindrical structures", *Proceedings of 23<sup>rd</sup> ASNT research symposium*, 24-27 March 2014, Minneapolis, MN, USA.
- [UB-09] Farhidzadeh, A., Salamone, S., (2014). "Corrosion diagnostics in loaded pre-stressing strands using guided ultrasonic waves and acoustic emission", *Proceedings of 23<sup>rd</sup> ASNT research symposium*, 24-27 March 2014, Minneapolis, MN, USA.
- [UB-10] Dehghan Niri, E., Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2015). "Multi-helical acoustic emission damage localization for corrosion monitoring of cylindrical structures", ASNT 24<sup>th</sup> Research Symposium, Anaheim, CA, March 16-19.

#### **Graduate and Postdoctoral Training:**

- [GP-01] Lanza di Scalea, F., Rizzo, P., Matt, H., Bartoli, I., Coccia, S., Salamone, S., Sorri, E., Marzani, A., Viola, E., Park, G., Farrar, C., Di Paola, M., and Pirrotta, A., (2006). "Health monitoring of civil and aerospace structural components by guided ultrasonic waves", *Proceedings of the 4th World Conference on Structural Control and Monitoring*, San Diego, CA 11-13 July
- [GP-02] Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Lanza di Scalea, F., (2011). "Health monitoring of prestressing Tendons in Post-tensioned Concrete Bridges", CD-ROM *Proceedings of the 90th Annual Meeting of the Transportation Research Board*, Washington, DC, January 2011.

#### **D. Technical Reports:**

##### **In Rank (assistant professor at UT)**

- [UT-01] Salamone, S., "Toward permanently installed pipeline monitoring systems", Technical Report No: DTPH56-13-H-CAAP03, to USDOT, Pipeline & Hazardous Materials Safety Administration (PHMSA), December 2015.

##### **In Rank (assistant professor at University at Buffalo)**

- [UB-01] Salamone, S., "Revision of graduate course CIE500s: introduction to nondestructive evaluation", Technical Report to the American Society for Nondestructive Testing (ASNT), University at Buffalo, 2012.



- [UB-02] Salamone, S., “Corrosion damage assessment of post-tensioned concrete structures”, Technical Report No. UTRC-RF49111-32-21, to University Transportation Research Center Region 2, March 2013.
- [UB-03] Salamone, S., “Smart lifeline systems for improving water and energy efficiency”, Technical Report to the New York State Pollution Prevention Institute, 2013.

#### **Graduate and Postdoctoral Training:**

- [GP-01] Coccia, S., Bartoli, I., Salamone, S. and Lanza di Scalea, F., “report of third field test of UCSD/FRA rail defect detection prototype, Gettysburg, PA, March 17-21, 2008”, Technical Report No. SSRP-08/02 to the Federal Railroad Administration, University of California, San Diego, 2008.
- [GP-02] Coccia, S., Phillips R., Bartoli, I., Salamone, S., Lanza di Scalea, F., “Non-contact rail defect detection”, Technical Report No. SSRP-08/02 to the Federal Railroad Administration, University of California, San Diego, 2008.
- [GP-03] Coccia, S., Bartoli, I., Phillips R., Salamone, S., Lanza di Scalea, F., “Non-contact rail defect detection: fourth field test”, Technical Report No. SSRP-09/04 to the Federal Railroad Administration, University of California, San Diego, 2009.
- [GP-04] Lanza di Scalea, F., Bartoli, I., Coccia, S., Salamone, S., and Phillips, R., “Automated measurement of stress in continuous welded rail (CWR)”, Letter Report to the Federal Railroad Administration, University of California, San Diego, 2009.
- [GP-05] Bartoli, I., Salamone, S., Phillips R., Nucera, C., Lanza di Scalea, F., “Health monitoring to detect failure of prestressing (PS) cables in segmental box-girder bridges”, Technical Report No. SSRP-09/06 to the California Department of Transportation, University of California, San Diego, 2009.
- [GP-06] Coccia, S., Bartoli, I., Phillips, R., Rizzo, P., Salamone, S., and Lanza di Scalea, F., “On-line high-speed rail defect detection – Part II,” Technical Report No. SSRP-10/03 to the Federal Railroad Administration, University of California, San Diego, 2010.
- [GP-07] Phillips, R., Lanza di Scalea, F., Nucera, C., Bartoli, I., Salamone, S., Kim, H., White, S., Rhymer, J., “STTR (Phase II) – Real-time in-situ impact and damage locator in anisotropic aerospace structures” Technical Report No. AFOSR-FA9550, to the Air Force Office of Scientific Research (AFOSR), Avanti Tech, LLC, 2013.

#### **INVITED LECTURES AND SEMINARS:**

##### **In Rank (assistant professor at UT)**

- [UT-01] *Toward Permanently Installed Pipeline Monitoring Systems*, U.S. Department of Transportation, Office of Pipeline Safety, October 2015 (Webinar).
- [UT-02] *Structural Health Monitoring of Civil Infrastructure Systems by using Guided Ultrasonic Waves*, Rice University, Department of Civil and Environmental Engineering, Houston, TX, November 2015.
- [UT-03] *Structural Health Monitoring of Civil Infrastructure Systems by using Guided Ultrasonic Waves*, Department of Mechanical Engineering, University of Texas, Austin, TX, March 2016.
- [UT-04] *Recent Advances in Ultrasonic Techniques for Structural Health Monitoring*, Department of Civil, Environmental, Aerospace, and Materials Engineering, University of Palermo, Italy, June 2016.

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- [UT-05] *An Introduction to Structural Health Monitoring of Civil Infrastructure Systems by using Guided Ultrasonic Waves*, Department of Civil, Environmental, Aerospace, and Materials Engineering, University of Palermo, Italy, May 2017 (Webinar).

**In Rank (assistant professor at the University at Buffalo)**

- [UB-01] *Health monitoring of prestressing tendons in post-tensioned concrete bridges*, Emerging Technologies in Bridge Engineering Class, University at Buffalo, October, 2011.
- [UB-02] *Health monitoring of prestressing tendons in post-tensioned concrete bridges*, Association of Bridge Construction and Design, Spring Conference, Batavia, NY, April 2011
- [UB-03] *Structural health monitoring of civil infrastructures*, Emerging technologies in Bridge Engineering Class, University at Buffalo, October, 2012.
- [UB-04] *Structural health monitoring by guided ultrasonic waves*, The City College of New York, Department of Mechanical Engineering, NY, April 2013.
- [UB-05] *Structural health monitoring by guided ultrasonic waves*, The New York State Association of Transportation Engineers, Buffalo, NY, November 2013.
- [UB-06] *Structural health monitoring*, University of Enna “Kore”, Italy, 19-20 December 2013 (16 hours lectures).
- [UB-07] *Structural health monitoring using guided ultrasonic waves*, Department of Mechanical Engineering, Binghamton University, State University of New York, Binghamton, NY, October 2014.
- [UB-08] *Structural Health Monitoring of Civil Infrastructure Systems: An Ultrasonic Wave-based Approach*, Department of Civil and Environmental Engineering, University of California, Berkeley, CA, February 2015.
- [UB-09] *Structural Health Monitoring of Civil Infrastructure Systems: An Ultrasonic Wave-based Approach*, Department of Civil, Architectural and Environmental Engineering, University of Texas, Austin, TX, March 2015.

**Graduate and Postdoctoral Training:**

- [GP-01] *Correction methods for the analysis of continuous linear systems under moving loads*, (Italian National Conferences) 1st Workshop C.I.Di.S., on Structure Dynamics, Department of Structural Engineering, University of Messina, Italy, February 2005.
- [GP-02] *Temperature effects on the structural diagnostics of CFRP composite aircraft components by ultrasonic guided waves*, Department of Structural Engineering, University of California, San Diego, December 2007.
- [GP-03] *Health monitoring of prestressing tendons in post-tensioned concrete structures*, Department of Civil & Environmental Engineering, University of California, Irvine, May 2009.
- [GP-04] *Health monitoring of prestressing tendons in post-tensioned concrete structures*, Dept. of Civil, Structural and Environmental Engineering, University at Buffalo, April 2010.

**PATENTS:**

- Lanza di Scalea, F., Coccia, S., Bartoli, I., Salamone, S., and Rizzo, P., “Defect detection in objects using statistical approaches,” USPTO No. 13/121,092, 2011.

**MEDIA COVERAGE OF RESEARCH:**

- *ASCE’s Civil Engineering Magazine*, “Corrosion-detecting sensors could protect nation’s highways,” January 2014.

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- *Engineering News-Record*, "New steel-cable corrosion test method could replace manual checks," December 2013.
- *In Compliance Magazine*, "Electric shock technique developed to detect bridge corrosion," December 2013.
- *Electronic Products Magazine*, "How do you detect corrosion in a bridge? Simple - you zap it with electricity," December 2013.

**COMMUNITY SERVICE:**

- The Interdisciplinary Science and Engineering Partnership (NSF-ISEP) Program, Department of Chemistry, University at Buffalo: Workshop organizer for Buffalo Public School district science teachers (June 2013).
- The Interdisciplinary Science and Engineering Partnership (ISEP) Program, Department of Chemistry, University at Buffalo: Worked with 4 high school teachers from the Buffalo Public School for one month (June 2012).

**GRANTS AND CONTRACTS:**

*Amounts indicated parenthetically (for joint proposals) are Salamone shares.*

**University of Texas at Austin:**

Co-Investigators	Title	Agency	Grant Total	Grant Period
S. Salamone (PI)	Toward integrated structural health monitoring systems for navy structures	Office of Naval Research	\$300,000	04/01/2017-02/29/2020
S. Salamone (PI)	A vision-based technique for damage assessment of civil structures	National Science Foundation	\$179,798	07/01/2015-07/31/2016
T. Hrynyk (PI) O. Bayrak S. Salamone	Evaluation of structural cracking in concrete	Texas Department of Transportation	\$497,102 (\$165,700)	01/01/2016-08/31/2018
R. Ferrom (PI) S. Salamone	Evaluating long-term durability and performance of prestressed concrete beam with extensive surface cracking	Texas Department of Transportation	\$521,998 (\$260,999)	01/01/2016-08/31/2018
Grand total			\$1,498,898	
Salamone Share			\$906,497	

**University at Buffalo:**

Co-Investigators	Title	Agency	Grant Total	Grant Period
S. Salamone (PI)	A vision-based technique for damage assessment of civil structures	National Science Foundation	\$115,424	08/01/2013-06/30/2015

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S. Salamone (PI)	Toward permanently installed pipeline monitoring systems	Pipeline & Hazardous Materials Safety Administration	\$146,000	10/01/2013-11/30/2015
S. Salamone (PI) G. Zhou	Collaborative research to advance scientific knowledge of the mechanism of corrosion in civil infrastructures	<i>SUNY Research Foundation</i>	\$100,000 (\$75,000)	12/01/2012-11/30/2014
S. Salamone (PI)	Corrosion damage assessment of post-tensioned concrete structures	<i>USDOT</i> (through the University Transportation Research Center 2	\$60,000	12/22/2011-02/28/2013
S. Salamone (PI)	Smart lifeline systems for improving water and energy efficiency	The New York State Pollution Prevention Institute	\$30,000	03/01/2013-09/30/2013
S. Salamone (PI)	Revision of graduate course CIE500S "Introduction to nondestructive evaluation	American Society of Nondestructive Evaluation	\$8,000	05/01/2011-06/01/2012
Grand total			\$459,424	
Salamone Share			\$434,424	

Total career external research funding raised is \$1,958,322; candidate's share is \$1,340,921.

#### **PH.D. SUPERVISION COMPLETED (3):**

##### **University at Buffalo**

- Mr. Ehsan Dehghanniri, September 2014.  
*Current position: Assistant Professor, New Mexico State University*
- Mr. Alireza Farhidzadeh, September 2014.  
*Current position: Ultrasonic Research Scientist, MISTRAS, INC.*
- Mr. Moses Matovu, September 2015.  
*Current position: Lecture at Makerere University, Uganda*

#### **M.S. SUPERVISION COMPLETED (4):**

##### **University of Texas at Austin (1)**

- Mr. Brennan Dubuc, May 2017.

##### **University at Buffalo (3)**

- Mr. Jan Dokonal, University at Buffalo, (August 2015).
- Ms. Sandhya Ravindran, University at Buffalo, (January 2015).
- Mr. Arvin Ebrahimkhanlou, University at Buffalo, (August 2015).

#### **PH.D. SUPERVISION IN PROGRESS (4):**

##### **University of Texas at Austin**

- Mr. Arvin Ebrahimkhanlou, admitted to candidacy, expected to graduate in December 2017.
- Mr. Brennan Dubuc, passed the Ph.D. qualifying exam, expected to graduate in May 2019.
- Mr. Korkut Kaynardağ, passed the Ph.D. qualifying exam, expected to graduate in May 2020.
- Mr. Apostolos Athanasiou (Co-Advised), passed the Ph.D. qualifying exam, expected to graduate in May 2020.

**M.S. SUPERVISION IN PROGRESS (1):****University of Texas at Austin**

- Ms. My Vu, expected to graduate in December 2018

**POST-DOCTORAL SUPERVISION (2):****University at Buffalo**

- Dr. Ehsan Dehghanniri, (September 2014–November 2014).
- Dr. Alireza Farhizadeh, (September 2014–February 2015).

**VISITING SCHOLAR SUPERVISION (5):****University of Texas at Austin**

- Xinran Li, undergraduate student from Tianjin University, China, (01/2017– present).
- Marco Manconi, MS student from Polytechnic of Turin, Italy, (03/2016– 11/2016).
- Alessandro Musumeci, MS student from Polytechnic of Turin, Italy, (04/2016– 12/2016).

**University at Buffalo**

- Dr. Marianna Ercolino, from University of Naples, Italy, (06/2014–12/2015).
- Stefano Pescetelli, from Polytechnic of Turin, Italy, (10/2012–03/2013).

**UNDERGRADUATE ADVISEES (9)****University of Texas at Austin**

- Mr. Marco Munoz, University of Texas at Austin (CAEE), 05/2016–12/2016.
- Ms. Caitlyn Kallus, University of Texas at Austin (CAEE), 09/2016–12/2016.
- Mr. Sivateja Ponnuru, University of Texas at Austin (ECE), 09/2016–12/2016.

**University at Buffalo**

- Mr. Brennan Dubuc, University at Buffalo, 05/2014–07/2015.
- Mr. Tresor Mavinga, University at Buffalo, 05/2013–05/2014 (LSAMP program)
- Mr. Jan Dokonal, University at Buffalo, 09/01/2013–05/2014
- Mr. Tenzin Nyandak, University at Buffalo, 09/01/2013–05/2014
- Mr. Derrek Drass, University at Buffalo, 12/2011–05/2012.
- Ms Cynthia Romero, California State University of Los Angeles, 06/2011–08/2011 (NEES-REU).

**STUDENT AWARDS:****University of Texas at Austin:**

- Arvin Ebrahimkhanlou (Ph.D. student), American Society for Nondestructive Testing (ASNT), travel award, 2017
- Arvin Ebrahimkhanlou (Ph.D. student), Phil M. Ferguson Endowed Presidential Scholarship in Civil Engineering, 2016
- Arvin Ebrahimkhanlou (Ph.D. student), Honorable Mention for the paper presented at the 58th Acoustic Emission Working Group Meeting, 2016.
- Arvin Ebrahimkhanlou (Ph.D. student), ASNT, travel award, 2016
- Arvin Ebrahimkhanlou (Ph.D. student), Society of Photo Optical Instrumentation Engineers

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(SPIE), travel award, 2016

- Brennan Dubuc (Ph.D. student), H. Douglas Steadman Fellowship in Structural Engineering, 2015

**University at Buffalo:**

- Arvin Ebrahimkhanlou (Ph.D. student), 1st place, department graduate students poster competition, 2015
- Arvin Ebrahimkhanlou (Ph.D. student), honorable mention, School of Engineering graduate students poster competition, 2015
- Alireza Farhidzadeh (Ph.D. student), Liu Huixian Earthquake Engineering Scholarship award, 2014
- Alireza Farhidzadeh (Ph.D. student), ASNT, travel award, 2014
- Alireza Farhidzadeh (Ph.D. student), 2<sup>nd</sup> place, department graduate students poster competition, 2014
- Ehsan Dehghanniri (Ph.D. student), 3<sup>rd</sup> place, department graduate students poster competition, 2014
- Ehsan Dehghanniri (Ph.D. student), ASNT, travel award, 2014
- Alireza Farhidzadeh (Ph.D. student), Research Grant Award, Structural Engineers Foundation (SEF) of Illinois, 2013
- Alireza Farhidzadeh (Ph.D. student), ASNT, travel award, 2013
- Ehsan Dehghanniri (Ph.D. student), ASNT, travel award, 2013
- Alireza Farhidzadeh (Ph.D. student), SPIE, travel award, 2013
- Ehsan Dehghanniri (Ph.D. student), NSF Award, Asian-Pacific Summer Program at KAIST in Daejeon, Korea, 2013
- Alireza Farhidzadeh (Ph.D. student), best paper Award, 54th Acoustic Emission Working Group, Princeton, 2012.
- Alireza Farhidzadeh (Ph.D. student), 1<sup>st</sup> place, department graduate students poster competition, 2012.
- Ehsan Dehghanniri (Ph.D. student), SPIE, travel award 2012.

**VITA:**

Dr. Salvatore Salamone is an assistant professor in the Department of Civil, Architectural and Environmental Engineering (CAEE), at University of Texas (UT) at Austin. Before joining UT, Dr. Salamone was an assistant professor at University at Buffalo (*promoted to Associate Professor with Tenure effective 09/2015*), and a postdoctoral fellow at the University of California, San Diego. His research team is pioneering scientific discovery and advancing the next-generation of technologies and methodologies for the monitoring and protection of infrastructure systems. His research projects are highly multidisciplinary in nature and require implementation of concepts of dynamics and vibrations, wave propagation, digital signal processing, data acquisition systems and extensive knowledge of sensors and statistical pattern recognition methods. His research contributions have been recognized by the 2014 Achenbach Medal, an international award that recognizes an individual who, within 10 years of Ph.D., has made an outstanding contribution to the advancement of the field of structural health monitoring. He has also received the 2011 Faculty Grant Award from the American Society for Nondestructive Testing. He is serving on several technical committees, including the ASCE Structural Health Monitoring and Control, and ASME Ultrasonics for Mechanical Systems committees. His research is sponsored by the National Science Foundation (NSF), the Office of Naval Research (ONR), the Pipeline & Hazardous Materials Safety Administration (PHMSA), the Texas Department of Transportation (TXDOT), the New York State Pollution Prevention Institute, the University Transportation Research Center 2, and the American Society of Nondestructive Testing (ASNT).

**Candidate's Summary of Activities**  
**Salvatore Salamone**

**Table 1. Statistics for "Assistant Professor Rank" at University of Texas (UT)**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	09 / 42
Peer-reviewed conference proceedings (in rank and total)	06 / 44
Number of journal papers in rank with supervised student(s) from UT as co-author	5
Total citations of all publications (career) from ISI Web of Knowledge	472
h-index (career) from ISI Web of Knowledge	13
Total citations of all publications (career) from Google Scholar or Publish or Perish	932
h-index (career) from Google Scholar or Publish or Perish	17
Total external research funding raised in rank	\$1,498,898
Total external research funding raised in rank (candidate's share)	\$906,497
Total number of external grants/contracts awarded in rank	4
Number of external grants/contracts awarded in rank as PI	2
PhD students completed†	0
MS students completed†	1 (1 sole advisor)
PhD students in pipeline (as of 09/2017) †	3.5 (3 sole advisor)
MS students in pipeline (as of 09/2017) †	1 (1 sole advisor)
Number of courses taught	5
Total number of students taught in organized courses	124
Average instructor evaluation for UG courses	4.85
Average instructor evaluation for Grad courses	4.67
Average course evaluation for UG courses	4.55
Average course evaluation for Grad courses	4.30
Number of teaching awards	
Student organizations advised	
Undergraduate researchers supervised	3
Service on journal editorial boards	3
Number of symposia organized	2

**Table 2. Research Statistics for "Assistant Professor Rank" at University at Buffalo (UB)**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	21 / 42
Peer-reviewed conference proceedings (in rank and total)	16 / 44
Number of journal papers in rank with supervised student(s) from UT as co-author	18
Total external research funding raised in rank	\$459,424
Total external research funding raised in rank (candidate's share)	\$434,424
Total number of external grants/contracts awarded in rank	6
Number of external grants/contracts awarded in rank as PI	6
PhD students completed†	3 (3 sole advisor)
MS students completed†	3 (3 sole advisor)
Number of courses taught	11
Total number of students taught in organized courses	510
Average instructor evaluation for UG courses	4.6
Average instructor evaluation for Grad courses	4.6



Average course evaluation for UG courses	4.4
Average course evaluation for Grad courses	4.5
Number of teaching awards	
Student organizations advised	
Undergraduate researchers supervised	6
Number of symposia organized	3

**Complete reverse chronological list of publications and scholarly/creative works**  
**Salvatore Salamone**

**Title of Dissertation:** *Structural health monitoring of adhesive joints in structures by built-in piezoelectric ultrasonic transducers accounting for temperature effects*

**Dissertation Advisors:** Mario Di Paola, and Francesco Lanza di Scalea

**Section 1. Works published (or in an equivalent status), in press, accepted, or under contract while in current rank at UT Austin.**

***A. Refereed Archival Journal Publications***

*Underlining indicates supervised student(s)*

Ebrahimkhanlou, A., Salamone, S., (2017). “A probabilistic framework for single-sensor acoustic emission source localization in thin metallic plates”, *Smart Material and Structures*, Vol. 26, 095026, 19 pp.

- Co-author(s): Ebrahimkhanlou, A., is a PhD student working under my supervision.
- Qualitative statement of contribution: This manuscript is the result of a research direction I initiated at UT. The manuscript presents the findings of work conducted by A. Ebrahimkhanlou in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Ebrahimkhanlou wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Ebrahimkhanlou, A., Salamone, S., (2017). “Acoustic emission source localization in thin metallic plates: a single-sensor approach based on edge reflections”, *Ultrasonics*, Vol. 78, pp. 134-145.

- Co-author(s): Ebrahimkhanlou, A., is a PhD student working under my supervision.
- Qualitative statement of contribution: This manuscript is the result of a research direction I initiated at UT. The manuscript presents the findings of work conducted by A. Ebrahimkhanlou in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Ebrahimkhanlou wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). “Effect of pressurization on helical guided wave energy velocity in fluid-filled pipes”, *Ultrasonics*, Vol. 75, pp.145-154.

- Co-author(s): B. Dubuc and A. Ebrahimkhanlou, are both PhD students working under my supervision.
- Qualitative statement of contribution: This paper results from work carried out by B. Dubuc for his PhD research. This work grew out of my previous work (see J31, J32). I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. B. Dubuc wrote the initial draft of the manuscript. A. Ebrahimkhanlou and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made

primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2016). "Damage localization in metallic plate structures using edge-reflected lamb waves", *Smart Materials and Structures*, Vol. 25, 085035, 13 pp.

- Co-author(s): B. Dubuc and A. Ebrahimkhanlou, are both PhD students working under my supervision.
- Qualitative statement of contribution: The manuscript presents the findings of work conducted by A. Ebrahimkhanlou in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Ebrahimkhanlou wrote the initial draft of the manuscript. B. Dubuc spent a substantial amount of time effort debugging the software and revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and significant contributions to the production of this manuscript.

Dehghan Niri, E., Salamone, S., (2016). "Quantitative corrosion imaging of pipelines using multi helical guided ultrasonic waves", *Structural Monitoring and Maintenance: an international journal*, Vol.3 (3), pp.215-232.

- Co-author(s): E. Dehghan Niri, was a PhD student working under my supervision at the University at Buffalo.
- Qualitative statement of contribution: The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made significant contributions to the intellectual content and supportive contributions to the production of this manuscript.

Matovu, M., Farhidzadeh, A., Salamone, S., (2016). "Damage assessment of steel-plate concrete composite walls by using infrared thermography: a preliminary study", *Journal of Civil Structural Health Monitoring*, Vol. 6(2), pp.303-313.

- Co-author(s): M. Matovu and A. Farhidzadeh were PhD students working under my supervision at the University at Buffalo.
- Qualitative statement of contribution: This paper results from work carried out primarily by M. Matovu for his PhD research. A. Farhidzadeh had a considerable role during the design of the experimental setup. I had a considerable role in the interpretation of the results on the thermograms and editing/revising of the manuscript. I made primary contributions to the intellectual content and significant contributions to production of this manuscript.

Ebrahimkhanlou, A., Farhidzadeh, A., Salamone, S., (2016). "Multifractal analysis of crack patterns in reinforced concrete shear walls", *Structural Health Monitoring*, Vol. 15(1), pp.81-92.

- Co-author(s): A. Ebrahimkhanlou, and A. Farhidzadeh were PhD students working under my supervision.

- Qualitative statement of contribution: This paper is based on work carried out by A. Ebrahimkhanlou, and A. Farhidzadeh their PhD research. I had a considerable role in the direction of the intellectual effort from which this manuscript results. I had a significant role in revising and editing the manuscript. I made primary contributions to the intellectual content and significant contributions to the production of this manuscript.

Ercolino M., Farhidzadeh, A., Salamone, S., Magliulo, G., (2015). "Detection of onset of failure in prestressed strands by cluster analysis of acoustic emissions", *Structural Monitoring and Maintenance: an international journal*, Vol.2 (4), pp.339-355.

- Co-author(s): M. Ercolino was a visiting postdoc that I supervised at the University at Buffalo. Her advisor was G. Magliulo assistant professor at the University of Naples, Italy. A. Farhidzadeh was a PhD student working under my supervision.
- Qualitative statement of contribution: This paper results from research conducted by M. Ercolino and A. Farhidzadeh under my supervision. I worked with M. Ercolino and A. Farhidzadeh to develop the research plan. I had a considerable role in the interpretation of the findings and participated in manuscript revision. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

#### ***B. Refereed conference proceedings***

Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). "Sparse reconstruction localization of multiple acoustic emissions in large diameter pipelines", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Portland, OR, March 25-29.

- Co-author(s): B. Dubuc and A. Ebrahimkhanlou, are both PhD students working under my supervision.
- Qualitative statement of contribution: This paper results from work carried out by B. Dubuc for his PhD research. This work grew out of my previous work (see J31, J32). I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. B. Dubuc wrote the initial draft of the manuscript. A. Ebrahimkhanlou and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2016). "Helical guided waves in liquid-filled cylindrical shells subjected to static pressurization stress", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Las Vegas, NV, March 8-12.

- Co-author(s): B. Dubuc and A. Ebrahimkhanlou, are both PhD students working under my supervision.
- Qualitative statement of contribution: This paper results from work carried out by B. Dubuc for his PhD research. This work grew out of my previous work (see J31, J32). I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. B. Dubuc wrote the initial draft of the manuscript. A. Ebrahimkhanlou and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final

form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2016). A guided ultrasonic imaging approach in isotropic plate structures using edge reflections”, *Proceedings of SPIE’s: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Las Vegas, NV, March 8-12.

- Co-author(s): A. Ebrahimkhanlou, and B. Dubuc are both PhD students working under my supervision.
- Qualitative statement of contribution: This paper results from work carried out by A. Ebrahimkhanlou for his PhD research. This work grew out of my previous work (see J31, J32). I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Ebrahimkhanlou wrote the initial draft of the manuscript. B. Dubuc and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2015). “Damage localization in plate-like structures using guided ultrasonic waves edge reflections”, *Proceedings of the 10th International Workshop Structural Health Monitoring*, ed. F-K. Chang, Stanford, CA, September 1–3, pp. 2624-2633.

- Co-author(s): A. Ebrahimkhanlou, and B. Dubuc are both PhD students working under my supervision.
- Qualitative statement of contribution: This paper results from work carried out by A. Ebrahimkhanlou for his PhD research. This work grew out of my previous work (see J31, J32). I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Ebrahimkhanlou wrote the initial draft of the manuscript. B. Dubuc and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

**Section 2. Works published (or in equivalent status) while in current rank at other institutions (if applicable)**

This section contains works published while I was an assistant professor at the University at Buffalo, SUNY.

***A. Refereed Archival Journal Publications***

Farhidzadeh, A., Epackachi, S., Salamone, S., Whittaker, A., (2015). “Bayesian decision and mixture models for ae monitoring steel-concrete composite shear walls”, *Smart Materials and Structures*, Vol. 24, 115018, 11 pp.

- Co-author(s): A. Farhidzadeh was a PhD student working under my supervision at the University at Buffalo (UB); S. Epackachi was a graduate student at UB working under the supervision of co-author A. Whittaker. A. Whittaker is a faculty at UB.
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh based on a research direction that I initiated at UB. I had a considerable role in the

direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. I led the efforts related to developing the analysis of acoustic emission (AE) signals, developing the data acquisition system, and analysis of the results as it pertains to AE features. A. Whittaker also had a considerable role on the direction of the large scale experimental tests and he led the efforts related to the structural analysis side of the work (e.g., backbone curves). All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Farhidzadeh, A., Salamone, S., (2015). "Reference-free corrosion damage diagnosis in steel strands using guided ultrasonic waves", *Ultrasonics*, Vol. 57(3), pp.198-208.

- Co-author(s): A. Farhidzadeh was a PhD student working under my supervision.
- The manuscript presents the findings of work conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Farhidzadeh wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2015). "Determination of the probability zone for acoustic emission source location in cylindrical shell structures", *Mechanical Systems and Signal Processing*, Vol. 60, pp. 971-985.

- Co-author(s): E. Dehghan Niri and A. Farhidzadeh were PhD students working under my supervision.
- The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. A. Farhidzadeh and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dehghan Niri, E., Salamone, S., (2015). "A multi-helical ultrasonic imaging approach for the structural health monitoring of cylindrical structures", *Structural Health Monitoring*, Vol. 14(1), pp.73-85.

- Co-author(s): E. Dehghan Niri was a PhD student working under my supervision.
- The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.



Farhidzadeh, A., Dehghan Niri, E., Zhong, Z., Salamone, S., Aref, A., Filiatrault, A., (2014). “Post-earthquake evaluation of pipelines rehabilitated with cured in place lining technology using acoustic emission”, *Construction & Building Materials*, Vol.54, pp.326-338.

- Co-author(s): A. Farhidzadeh and E. Dehghan Niri were PhD students working under my supervision at the University at Buffalo (UB); Z. Zhong was a graduate student at UB working under the supervision of co-authors A. Aref and A. Filiatrault. A. Aref and A. Filiatrault are faculty at UB.
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. A. Aref and A. Filiatrault also had a considerable role on the direction of the large scale experimental tests and they led the efforts related to the earthquake simulation side of the work (e.g., seismic response). All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form.

Moustafa, A., Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2014). “Corrosion monitoring of post-tensioned concrete structures using fractal analysis of guided ultrasonic waves”, *Structural Control and Health Monitoring*, Vol. 21(3), pp. 438-448.

- Co-author(s): A. Moustafa was a MS student, working under my supervision at the University at Buffalo (UB), while E. Dehghan Niri and A. Farhidzadeh were PhD students working under my supervision.
- Qualitative statement of contribution: This publication is based on research conducted by A. Moustafa in pursuit of MS degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. E. Dehghan Niri and A. Farhidzadeh had a considerable role on the direction of the accelerated corrosion tests. All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2014). “Nonlinear kalman filtering for acoustic emission source localization in anisotropic panels”, *Ultrasonics*, Vol. 54(2), pp. 486-501.

- Co-author(s): E. Dehghan Niri and A. Farhidzadeh were PhD students working under my supervision.
- The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. A. Farhidzadeh and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Lanza di Scalea, F., Rizzo, P., Salamone, S., Bartoli, I., Al-Nazer, L., (2013). "Ultrasonic tomography for three-dimensional imaging of internal rail flaws: proof-of-principle numerical simulations", *Journal of the Transportation Research Board*, Vol.2374, pp.162-168.

- Co-author(s): F. Lanza di Scalea was my postdoctoral advisor; he is a faculty member at the University of California San Diego (UCSD); P. Rizzo is a faculty member at the University of Pittsburgh; I. Bartoli is a faculty peer at Drexel University; L. Al-Nazer is program manager at the Federal Rail Administration.
- Qualitative statement of contribution: This publication is based on research conducted at UCSD when I was a postdoctoral fellow. I was involved with writing the manuscript as well as revising the manuscript.

Farhidzadeh, A., Dehghan Niri, E., Moustafa, A., Salamone, S., Whittaker, A., (2013). "Damage assessment of reinforced concrete structures using fractal analysis of residual crack patterns", *Experimental Mechanics*, Vol. 53(9), pp. 1607-1619.

- Co-author(s): A. Farhidzadeh and E. Dehghan Niri were PhD students working under my supervision at the University at Buffalo (UB); A. Moustafa was a graduate student at UB working under my supervision. A. Whittaker is a faculty at UB.
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh based in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. I led the efforts related to developing the fractal analysis of crack patterns, and analysis of the results as it pertains to fractals. A. Whittaker also had a considerable role on the direction of the large scale experimental tests and he led the efforts related to the structural analysis side of the work (e.g., backbone curves). All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Farhidzadeh, A., Salamone, S., Singla, P., (2013). "A probabilistic approach for damage identification a crack mode classification in reinforced concrete structures", *Journal Intelligent Material Systems & Structures*, Vol. 24(14), pp.1722-1735.

- Co-author(s): A. Farhidzadeh was a PhD student working under my supervision at the University at Buffalo (UB); P. Singla is a faculty at University at Buffalo.
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2013). “Adaptive multisensor data fusion for acoustic emission (AE) source localization in noisy environment”, *Structural Health Monitoring*, Vol. 12(1), pp.59-77.

- Co-author(s): E. Dehghan Niri and A. Farhidzadeh were PhD students working under my supervision.
- The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. A. Farhidzadeh and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Farhidzadeh, A., Salamone, S., Luna, B., Whittaker, A., (2013). “Acoustic emission monitoring of a reinforced concrete shear wall by b-value based outlier analysis”, *Structural Health Monitoring*, Vol. 12(1), pp. 3-13.

- Co-author(s): A. Farhidzadeh was a PhD student working under my supervision at the University at Buffalo (UB); B. Luna was a graduate student at UB working under the supervision of co-author A. Whittaker. A. Whittaker is a faculty at UB.
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. I led the efforts related to developing the analysis of acoustic emission (AE) signals, developing the data acquisition system, and analysis of the results as it pertains to AE features. A. Whittaker also had a considerable role on the direction of the large scale experimental tests and he led the efforts related to the structural analysis side of the work (e.g., backbone curves). All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Farhidzadeh, A., Dehghan Niri, E., Salamone, S., Luna, B., Whittaker, A., (2013). “Monitoring crack propagation in reinforced concrete shear walls by acoustic emission”, *Journal of Structural Engineering*, Vol. 139(12), 04013010.

- Co-author(s): A. Farhidzadeh and E. Dehghan Niri were PhD students working under my supervision at the University at Buffalo (UB); B. Luna was a graduate student at UB working under the supervision of co-author A. Whittaker. A. Whittaker is a faculty at UB.
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. I led the efforts related to developing the analysis of acoustic emission (AE) signals, developing the data acquisition system, and analysis of the results as it pertains to AE features. A. Whittaker also had a considerable role on the direction of the large scale experimental tests and he led the efforts related to the structural analysis side of the work (e.g., backbone curves). All authors had a primary role in interpreting and discussing the results,

and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dehghan Niri, E., Salamone, S., (2012). "Passively tunable mechanism for dual bimorph energy harvester with variable tip stiffness and axial load", *Smart Materials and Structures*, Vol. 21(12), 125025, 15 pp.

- Co-author (s): E. Dehghan Niri, was a PhD student working under my supervision at the University at Buffalo.
- Qualitative statement of contribution: The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made significant contributions to the intellectual content and supportive contributions to the production of this manuscript.

Dehghan Niri, E., Salamone, S., (2012). "A probabilistic framework for acoustic emission source localization in plate-like structures", *Smart Materials and Structures*, Vol. 21(3), 035009, 16 pp.

- Co-author (s): E. Dehghan Niri, was a PhD student working under my supervision at the University at Buffalo.
- Qualitative statement of contribution: The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made significant contributions to the intellectual content and supportive contributions to the production of this manuscript.

Moustafa, A., Salamone, S., (2012). "Fractal dimension based Lamb wave tomography algorithm for damage detection in plate-like structures", *Journal Intelligent Material Systems & Structures*, Vol. 23, pp. 1269-1276.

- Co-author (s): A. Moustafa, was a MS student working under my supervision at the University at Buffalo.
- Qualitative statement of contribution: The manuscript presents the findings of work conducted by A. Moustafa in pursuit of his Master degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Moustafa wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made significant contributions to the intellectual content and supportive contributions to the production of this manuscript.

Marzani, A., Salamone, S., (2012). "Numerical prediction and experimental verification of temperature effect on plate waves generated and received by piezoceramic sensors", *Mechanical Systems and Signal Processing*, Vol.30, pp.204-217.

- Co-author (s): A. Marzani is a faculty peer at the University of Bologna, Italy
- Qualitative statement of contribution: I have provided intellectual contribution and experimental data analyses for this study. Marzani provided intellectual contribution.

Salamone, S., Veletzos, M.J., Lanza di Scalea, F., Restrepo, J.I., (2012). "Detection of initial yield and onset of failure in bonded post-tensioned concrete beams", *Journal of Bridge Engineering*, Vol. 17(6), pp.966-974 (SPECIAL ISSUE: Nondestructive Evaluation and Testing for Bridge Inspection and Evaluation).

- Co-author (s): M.J. Veletzos is a faculty peer at Merrimack College, F. Lanza di Scalea and J.I. Restrepo are faculty peers at the University of California San Diego
- Qualitative statement of contribution: I am the lead author of this paper and have designed and performed the study. This publication is a partial result of my work during my tenure as postdoctoral scholar at University of California San Diego. The article was written and data analyses were performed while in rank at University at Buffalo.

#### *B. Refereed conference proceedings*

Farhidzadeh, A., Salamone, S., (2015). "Corrosion damage estimation in multi-wire steel strands using guided ultrasonic waves", *Proceedings of SPIE's: Structural Health Monitoring and Inspection of Advanced Materials, Aerospace, and Civil Infrastructure*, Vol. 9437, doi: 10.1117/12.2084053.

- Co-author(s): A. Farhidzadeh was a PhD student working under my supervision.
- The manuscript presents the findings of work conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Farhidzadeh wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Farhidzadeh, A., Salamone, S., (2015). "Nondestructive evaluation of corrosion in prestressed strands using guided ultrasonic waves", *Proceedings of the 4<sup>th</sup> International Conference on Bridges (4IBC2015)*, Tehran, Iran, January 24-26, pp. 1-7.

- Co-author(s): A. Farhidzadeh was a PhD student working under my supervision.
- The manuscript presents the findings of work conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. A. Farhidzadeh wrote the initial draft of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dubuc, B., Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2015). "Multi-helical ultrasonic imaging for corrosion monitoring of cylindrical structures", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, San Diego, CA, March 8-12.

- Co-author(s): B. Dubuc, E. Dehghan Niri, A. Farhidzadeh were all PhD students working under my supervision.
- The manuscript presents the findings of work conducted by B. Dubuc in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. B. Dubuc wrote the initial draft of the manuscript. E. Dehghan Niri, A. Farhidzadeh and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Ebrahimkhanlou, A., Farhidzadeh, A., Salamone, S., (2015). "Multifractal analysis of two-dimensional images for damage assessment of reinforced concrete structures", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, San Diego, CA, March 8-12.

- Co-author(s): A. Ebrahimkhanlou, and A. Farhidzadeh were PhD students working under my supervision.
- Qualitative statement of contribution: This paper is based on work carried out by A. Ebrahimkhanlou, and A. Farhidzadeh for their PhD research. I had a considerable role in the direction of the intellectual effort from which this manuscript results. I had a significant role in revising and editing the manuscript. I made primary contributions to the intellectual content and significant contributions to the production of this manuscript.

Farhidzadeh, A., DehghanNiri, E., Salamone, S., (2014). "Structural health monitoring of pipelines rehabilitated with lining technology" *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, 90641M, doi: 10.1117/12.2044877.

- Co-author(s): A. Farhidzadeh and E. DehghanNiri were PhD students working under my supervision at the University at Buffalo (UB).
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form

Farhidzadeh, A., Ebrahimkhanlou, A., Salamone, S., (2014). "A vision-based technique for damage assessment of reinforced concrete structures" *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, 90642H, doi: 10.1117/12.2044875.

- Co-author(s): A. Farhidzadeh, and A. Ebrahimkhanlou, were PhD students working under my supervision.
- Qualitative statement of contribution: This paper is based on work carried out by A. Ebrahimkhanlou, and A. Farhidzadeh their PhD research. I had a considerable role in the direction of the intellectual effort from which this manuscript results. I had a significant role in revising and editing the manuscript. I made primary contributions to the intellectual content and significant contributions to the production of this manuscript.



Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2013). “Acoustic emission source localization in anisotropic structures through nonlinear kalman filtering estimation” *Proceedings of the 9th International Workshop Structural Health Monitoring*, ed. F-K. Chang, Stanford, CA, September 10–13, pp. 2624-2633.

- Co-author(s): E. Dehghan Niri and A. Farhidzadeh were PhD students working under my supervision.
- The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. A. Farhidzadeh and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Farhidzadeh, A., Dehghan Niri, E., Salamone, S., (2013). “Crack pattern quantification for advanced visual inspection of concrete structures”, *Proceedings of the 9th International Workshop Structural Health Monitoring*, ed. F.-K. Chang, Stanford, CA, September 10–13, pp. 2523-2532.

- Co-author(s): A. Farhidzadeh, and E. Dehghan Niri, were PhD students working under my supervision.
- Qualitative statement of contribution: This paper is based on work carried out by A. Farhidzadeh, and E. Dehghan Niri for their PhD research. I had a considerable role in the direction of the intellectual effort from which this manuscript results. I had a significant role in revising and editing the manuscript. I made primary contributions to the intellectual content and significant contributions to the production of this manuscript.

Farhidzadeh, A., Dehghan Niri, E., Salamone, S., (2013). “Crack pattern quantification of concrete structures based on fractal analysis” *Proceedings of the 11th International Conference on Structural Safety & Reliability*”, pp. 361-366.

- Co-author(s): A. Farhidzadeh, and E. Dehghan Niri, were PhD students working under my supervision.
- Qualitative statement of contribution: This paper is based on work carried out by A. Farhidzadeh, and E. Dehghan Niri for their PhD research. I had a considerable role in the direction of the intellectual effort from which this manuscript results. I had a significant role in revising and editing the manuscript. I made primary contributions to the intellectual content and significant contributions to the production of this manuscript.

Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2013). “Adaptive unscented kalman filter (UKF) for acoustic emission (AE) source localization in noisy environment” *Proceedings of SPIE’s: Health Monitoring of Structural and Biological Systems*, 869518, doi: 10.1117/12.2008617.

- Co-author(s): E. Dehghan Niri and A. Farhidzadeh were PhD students working under my supervision.

- The manuscript presents the findings of work conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort of the research that is the basis of this manuscript. E. Dehghan Niri wrote the initial draft of the manuscript. A. Farhidzadeh and I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Farhidzadeh, A., Salamone, S., Singla, P., (2013). "Gaussian mixture modeling of acoustic emissions for structural health monitoring of reinforced concrete structures" *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, 86920B (April 19, 2013); doi:10.1117/12.2008705.

- Co-author(s): A. Farhidzadeh was a PhD student working under my supervision at the University at Buffalo (UB); P. Singla is a faculty peer at UB.
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Lanza di Scalea, F., Kim, H., White, S., Chen, Z.M., Salamone, S., Bartoli, I. (2013). "Impact monitoring in aerospace panels via piezoelectric rosettes", *Composite Materials and Joining Technologies for Composites; Proceedings of Society of Experimental Mechanics*, Costa Mesa, CA, Vol.7, pp. 207-213.

- Co-author(s): F. Lanza di Scalea and H. Kim are faculty at University of California San Diego; S. White and Z.M. Chen are graduate students under faculty peer H. Kim; I. Bartoli is a faculty peer at Drexel University
- Qualitative statement of contribution: This publication is a partial result of my work during my tenure as postdoctoral scholar at University of California San Diego. The article was written and data analyses were performed while in rank at University at Buffalo.

Farhidzadeh, A., Salamone, S., Dehghan-Niri, E., Luna, B., Whittaker, A., (2012). "Assessment of reinforced concrete shear walls by acoustic emission", CDROM *Proceedings of NDE/NDT for Highways and Bridges: Structural Materials Technology (SMT)*, New York, New York, USA, pp. 74-81.

- Co-author(s): A. Farhidzadeh and Dehghan Niri were PhD students working under my supervision at the University at Buffalo (UB); B. Luna was a graduate student at UB working under the supervision of co-author A. Whittaker. A. Whittaker is a faculty at UB.
- Qualitative statement of contribution: This publication is based on research conducted by A. Farhidzadeh in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. I led the efforts related to developing the analysis of acoustic emission (AE) signals, developing the data acquisition system, and analysis of the results as it pertains to AE features. A. Whittaker also had a considerable role on the direction of the large scale experimental

tests and he led the efforts related to the structural analysis side of the work (e.g., backbone curves). All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Dehghan Niri, E., Salamone, S., Singla, P., (2012). "Acoustic emission (AE) source localization using extended kalman filter (EKF)", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, <http://dx.doi.org/10.1117/12.914848>.

- Co-author(s): E. Dehghan Niri was a PhD student working under my supervision at the University at Buffalo (UB); P. Singla is a faculty peer at UB.
- Qualitative statement of contribution: This publication is based on research conducted by E. Dehghan Niri in pursuit of his doctorate degree. I had a considerable role in the direction of the intellectual effort from which this manuscript results and substantially contributed to the discussion interpreting the results. All authors had a primary role in interpreting and discussing the results, and production of the manuscript. I spent a substantial amount of time effort rewriting/revising and editing the manuscript drafts to bring it to its final form. I made primary contributions to the intellectual content and primary contributions to the production of this manuscript.

Bartoli, I., Castellazzi, G. Marzani, A., Salamone, S., (2012). "Prediction of stress waves propagation in progressively loaded seven wire strands", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, <http://dx.doi.org/10.1117/12.915297>.

- Co-author(s): I. Bartoli is a faculty peer at Drexel University; G. Castellazzi is a Research scientist at University of Bologna; A. Marzani is a faculty peer at University of Bologna.
- Qualitative statement of contribution: This publication is a partial result of my work during my tenure as postdoctoral scholar at University of California San Diego. The article was written and data analyses were performed while in rank at University at Buffalo.

Salamone, S., Bartoli, I., Rhymer, J., Lanza di Scalea, F., Kim, H., (2011). "Validation of the piezoelectric rosette technique for locating impacts in complex aerospace panels", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Vol. 7984: 79841E.

- Co-author(s): I. Bartoli is a faculty peer at Drexel University; F. Lanza di Scalea and H. Kim are faculty at University of California San Diego; J. Rhymer is a graduate student under faculty peer H. Kim
- Qualitative statement of contribution: This publication is a partial result of my work during my tenure as postdoctoral scholar at University of California San Diego. The article was written and data analyses were performed while in rank at University at Buffalo.

**Section 3. Works published (or in equivalent status) while in previous rank(s) at UT Austin (if applicable)**

Not Applicable

**Section 4. Works published (or in equivalent status) while in previous rank(s) at other institutions (if applicable)**

This section contains works published while I was a postdoctoral fellow at the University of California San Diego and a graduate student at the University of Palermo, Italy.

***A. Refereed Archival Journal Publications***

Salamone, S., Bartoli, I., Di Leo, P., Lanza di Scalea, F., Ajovalasit, A., D'Acquisto, L., Rhymer, J., Kim, H., (2010). "High velocity impact location on aircraft panels using macro fiber composite piezoelectric rosettes", *Journal of Intelligent Material Systems and Structures*, Vol. 21(9), pp. 887–896.

Srivastava, A., Bartoli, I., Salamone, S., Lanza di Scalea, F., (2010). "Higher harmonic generation in nonlinear waveguides of arbitrary cross-section", *Journal of the Acoustical Society of America*, Vol. 127(5), pp. 2790–2796.

Rizzo, P., Cammarata, M., Bartoli, I., Lanza di Scalea, F., Salamone, S., Coccia, S., and Phillips, R., (2010). "Ultrasonic guided waves-based monitoring of rail head: laboratory and field tests", *Advances in Civil Engineering*, Vol. 2010 (ID.291293).

Salamone, S., Lanza di Scalea, F., Bartoli, I., Coccia, S., (2009). "Guided-wave health monitoring of aircraft composite panels under changing temperature", *Journal of Intelligent Material Systems and Structures*, Vol. 20(9), pp. 1079–1090.

Salamone, S., Fasel, T., Bartoli, I., Srivastava, A., Lanza di Scalea, F., Todd, M., (2009). "Health monitoring approach for adhesively bonded joints", *Materials Evaluation*, Vol. 67(7), pp. 828–836 (invited).

Coccia, S., Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Fateh, M., (2009). "Non-contact ultrasonic guided wave detection of rail defects", *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2117, pp. 77–84.

Bilello, C., Di Paola, M., Salamone, S., (2008). "A correction method for the analysis of continuous linear one-dimensional systems under moving loads", *Journal of Sound and Vibration*, Vol. 315, pp. 226–238.

Cottone, G., Pirrotta, A., Salamone, S., (2008). "Incipient damage identification through characteristics of the analytical signal response", *Structural Control and Health Monitoring*, Vol. 15(8), pp. 1122–1142.

Lanza di Scalea, F., Salamone, S., (2008). "Temperature effects in ultrasonic Lamb wave structural health monitoring systems", *Journal of the Acoustical Society of America*, Vol. 124(1), pp. 161–174.

Salamone, S., Bartoli, I., Lanza di Scalea, F., Coccia, S., (2008). "Temperature effect on guided wave based macrofiber composite transduction", *Materials Evaluation*, Vol. 66(10), pp. 1071–1076.

Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Coccia, S., Sikorsky, C., (2008). "Monitoring pre-stress level in seven wire prestressing tendons by inter wire ultrasonic wave propagation", *Journal of Advances in Science and Technology—Embodying Intelligence in Structures and Integrated Systems*, Vol. 56, pp. 200–205.

Bilello, C., Di Paola, M., Salamone, S., (2005). "A correction method for dynamic analysis of linear continuous systems", *Computer and Structures*, Vol. 83, pp. 662–670.

### ***B. Refereed conference proceedings***

Bartoli, I., Salamone, S., Rhymer, J., Lanza di Scalea, F., Kim, H., (2011). "Impact force identification in aerospace panels by an inverse ultrasonic guided wave problem", *Proceedings of SPIE's: Health Monitoring of Structural and Biological Systems*, Vol. 7984: 79841F.

Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Lanza di Scalea, F., (2011). "Health monitoring of prestressing tendons in post-tensioned concrete structures", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems*, Vol. 7981: 798122.

Coccia, S., Phillips, R., Bartoli, I., Salamone, S., Lanza di Scalea, F., Fateh, M., Carr, G., (2011). "UCSD/FRA non-contact ultrasonic guided wave system for rail inspection: an update", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Vol. 7981: 798113.

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Lanza di Scalea, F., Salamone, S., Bartoli, I., Kim, H., and Rhymer, J., "Location and identification of impact forces in composite aerospace panels, (2011)." *Proceedings of the 40th National Conference of the Italian Association for Stress Analysis (AIAS)*, Palermo, Italy, September 7-10, 2011.

Nucera, C., Salamone, S., Bartoli, I., Phillips, R., Lanza di Scalea, F. and Sikorsky, C., "Nonlinear ultrasonic guided waves for stress monitoring in prestressing tendons for post-tensioned concrete structures," CD-ROM *Proceedings of the ASNT Conference on NDE/NDT for Highways and Bridges: Structural Materials Technology*, New York, NY, pp. 409-417, August 16-20, 2010.

Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Lanza di Scalea, F., Sikorsky, C., Tamutus, T., (2010). "Health monitoring of prestressing tendons in post-tensioned concrete structures", CDROM *Proceedings of NDE/NDT for Highways and Bridges: Structural Materials Technology (SMT)*, New York, pp. 401-408, August 16-20, 2010.

Bartoli, I., Marzani, A., Phillips, R., Coccia, S., Lanza di Scalea, F., Salamone, S., Fateh, M., Carr, G., (2010). "Ultrasonic guided waves in continuously welded rails for buckling prediction", *Proceedings of 5th European Workshop on Structural Health Monitoring*, Fabio Casciati and Michele Giordano, ed., Sorrento, Italy, June 29–July 4, ISBN: 978-1-60595-024-2, pp: 6.

Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Srivastava, A., Lanza di Scalea, F. and Sikorsky, C., (2010). "Stress monitoring by ultrasonic guided waves in prestressing tendons for post-tensioned concrete structures", *Proceedings of 5th European Workshop on Structural Health Monitoring*, Fabio Casciati and Michele Giordano, ed., Sorrento, Italy, June 29–July 4, ISBN: 978-1-60595-024-2.

Bartoli, I., Salamone, S., Mezzanotte, M., Lanza di Scalea, F., Kim, K., Rhymer, J., (2010). "Impact force identification on isotropic and composite panels", *Proceedings of SPIE's: The International Society for Optical Engineering*, Vol. **7650**: 765007.

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Marzani, A., Bocchini, P., Viola, E., Bartoli, I., Coccia, S., Salamone, S., Lanza di Scalea, F., (2009). "A software for the computation of acoustic waves in cylindrical, plate and arbitrary cross-section waveguides", *Proceedings, Associazione Italiana Prove non Distruttive - AIPND*, , pp. CDId57-1 - CDId57-6, Rome, Italy, 15–17 October.

Coccia, S., Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Fateh, M. and Carr, G., (2009). "Noncontact ultrasonic guided-wave detection of rail defects", *Proceedings of the Joint International Light Rail Conference: Growth and Renewal*, April 19–21, Los Angeles, California, #01206828, pp: 285–296.

Bartoli, I., Salamone, S., Di Leo, P., Mezzanotte, M., Lanza di Scalea, F., Kim K., Rhymer, J., Phillips, R., Ajovalasit, A., D'Acquisto, L., (2009). "Impact force identification and damage location on ship and aircraft panels", *Proceedings 7<sup>th</sup> Int. Workshop on Structural Health Monitoring*, ed. F.-K. Chang, Stanford University, September 9–11.

Coccia, S., Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Fateh, M., Carr, G., (2009). "Non-contact ultrasonic guided wave detection of rail defects. Prototype development and field testing for the Federal Railroad Administration", *Proceedings 7th International Workshop Structural Health Monitoring*, ed. F.-K. Chang, Stanford, CA, September 9–11, Vol. 1, pp: 255–262.

Srivastava, A., Bartoli, I., Salamone, S., Lanza di Scalea, F., (2009). "Behavior of nonlinear higher harmonics in plate and rod guided waves", *Proceedings 7<sup>th</sup> Int. Workshop on Structural Health Monitoring*, ed. F.-K. Chang, Stanford, CA, September 9–11.

Bartoli, I., Nucera, C., Salamone, S., Srivastava, A., Phillips R., Lanza di Scalea, F., Sikorsky C., Coccia, S., (2009). "Stress monitoring in prestressing tendons for post-tensioned concrete structures by nonlinear ultrasonic guided waves", *Proceedings 7th International Workshop Structural Health Monitoring*, ed. F.-K. Chang, Stanford, CA, September 9–11, Vol. 2, pp: 2115 –2122.

Bartoli, I., Nucera, C., Srivastava, A., Salamone, S., Phillips R., Lanza di Scalea, F., Coccia, S., Sikorsky C., (2009). "Nonlinear ultrasonic guided waves for stress monitoring in prestressing tendons for post-tensioned concrete structures", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace System*, Vol. 7292, pp: 729220 –729220–11.

Salamone, S., Lanza di Scalea, F., (2009). "Temperature effects in Lamb wave structural health monitoring systems", *Proceedings of SPIE's: Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace System*, Vol. 7295, pp: 729500–729500–11.

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Salamone, S., Bartoli, I., Lanza di Scalea, F., Coccia, S., (2008). "Structural health monitoring of adhesively bonded components in aerospace structures: temperature effect on guided wave based macro-fiber composite transduction and damage detection", *Proceedings of ASNT Research Symposium and Spring Conference*, Anaheim, CA, March-April 2008, pp. 172-179.

Matt, H., Bartoli, I., Salamone, S., Rizzo, P., Lanza di Scalea, F., Park, G. and Farrar, C., "Automated damage detection in UAV wing skin-to-spar joints based on outlier analysis of guided wave energy, (2006). ", *Proceedings of 3rd European Workshop on Structural Health Monitoring*, A. Guemes, ed., Granada, Spain, July 5-7, pp. 1012-1019.

### 3. TEACHING

#### Budget Council Statement

Prepared by Eric B. Williamson and Todd A. Helwig



While in rank as an Assistant Professor at the University of Texas at Austin (UT Austin), Dr. Salamone has taught one course at the undergraduate level and two courses at the graduate level, as follows:

CE 329 – Structural Analysis. This course is required for undergraduates in both Civil Engineering and Architectural Engineering (CAEE). It is normally taken in the junior year. This course builds on concepts introduced in Statics and Strength of Materials and provides students with fundamental concepts needed to analyze and design different structural systems. CE 329 is the first class where students have direct experience with Structural Engineering. Dr. Salamone has taught this course twice with enrollments of 42 and 44 students.

CE 397 – Structural Health Monitoring and Non-Destructive Evaluation. This course is an advanced graduate course that Dr. Salamone introduced after joining the faculty of CAEE at UT Austin. The course provides students with extensive hands-on experience through regular lab work. Because of this lab-intensive requirement, enrollments have been limited to 15 students so that all students have access to necessary equipment. Dr. Salamone has taught this course two times. The enrollment in the sections of this course taught by Dr. Salamone was 15 students both times the course was offered.

CE 397 – Probabilistic Analysis and Design. This is a graduate course that covers how variability in specified design parameters and uncertainty influence engineering design. This course was introduced by Dr. Salamone after he joined the UT Austin faculty. Dr. Salamone has taught this course once, with eight students enrolled in the class.

Evaluation of Dr. Salamone's teaching was based on a review of his teaching portfolio, instructor surveys, and peer reviews of teaching. Table 1 summarizes instructor ratings for all courses taught by Dr. Salamone, separated by course. The enrollment numbers shown in this table are based on the number of students enrolled on the 12<sup>th</sup> class day.

Dr. Salamone has had outstanding instructor ratings. For CE 329 his average instructor rating is 4.9. The average instructor rating for all other faculty members teaching this course over the past six years is 4.3. For his graduate course on Structural Health Monitoring and Non-Destructive Evaluation, his average instructor rating is 4.8. Finally, he received an instructor rating of 4.4 for his graduate course on Probabilistic Analysis and Design, which is very good given that he first developed and taught this course during the spring 2017 semester. In general, Dr. Salamone's instructor ratings exceed the norm for CSE, CAEE, and for Structural Engineering Faculty that teach the same or similar courses.

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and Environmental Engineering

Table 1 – Instructor Ratings for Dr. Salamone

Course	Semester	Enrollment	Instructor Rating
CE 329	Fall 15	42	4.9
	Fall 16	44	4.8
CE 397 (Str. Health Monitor & Non-Des. Eval.)	Spring 16	15	4.9
	Spring 17	15	4.7
CE 397 (Prob. Analysis & Dsgn.)	Spring 17	8	4.4

Two peer reviews of Dr. Salamone's teaching were conducted by a senior faculty member in CAEE between 2015 and 2017. These peer reviews are consistent with his student evaluations, further supporting his reputation as an outstanding instructor. The peer reviews also offered a few minor constructive recommendations for Dr. Salamone on techniques and approaches to improve his teaching.

Since joining UT Austin in the fall of 2015, no Ph.D. students have graduated under Dr. Salamone's supervision, though three Ph.D. students graduated under his sole supervision while he was an Assistant Professor at the University of Buffalo. Currently, Dr. Salamone is the sole supervisor for three Ph.D. students, and he is co-supervising one additional Ph.D. student. Dr. Salamone has graduated one M.S. student at UT Austin under his sole supervision, and he also graduated three M.S. students while at the University of Buffalo. He currently serves as the sole supervisor of one M.S. student at UT Austin. Aside from graduate student supervision, Dr. Salamone is currently supervising two post-doctoral researchers and three undergraduate research assistants. Dr. Salamone's level of student supervision is consistent with the norm for CAEE and for Structural Engineering.

An important teaching contribution by Dr. Salamone was his collaboration with K-12 school teachers while he was on the faculty at the University of Buffalo. This work was supported by funding from NSF. Dr. Salamone provided science and math teachers the chance to conduct interdisciplinary research at his Smart Structures Research Laboratory. This experience allowed K-12 teachers to develop new educational modules to explain the hazardous nature of earthquakes and to improve earth science education.

In summary, since joining UT Austin in September of 2015, Dr. Salamone's teaching has been excellent and exceeds the norm of assistant professors in CAEE. He has demonstrated excellence in teaching a required undergraduate course (CE 329), and he has developed two new graduate courses on topics not previously available in our program. Further, he has been active in mentoring undergraduate students, graduate students, post-doctoral researchers, and visiting scholars. The breadth and quality of Dr. Salamone's teaching activities is a major asset to Structural Engineering, CAEE, and UT Austin.

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Department of Civil, Architectural  
and Environmental Engineering

## TEACHING STATEMENT

### Teaching Philosophy

One of the primary reasons why I have chosen an academic position is that I enjoy teaching and interacting with students at all levels of instruction. I feel that teaching done with dedication and energy can be a rewarding experience for both professor and student. I firmly believe that a quality education is fundamental for students and society; each benefits from the sharing and advancement of knowledge. I believe my fundamental role as an educator is to develop a mentoring relationship with my students in order to develop their scholarship in the field of structural engineering. As the field keeps changing, one of the key goals is to provide students with a framework and desire for life-long learning. I aim to help students become reflective and collaborative thinkers, as well as effective communicators. As with any relationship, both parties must be involved in its growth and development. As a teacher, I strive to demonstrate to each student my respect for them as individuals and for their contributions to the learning process. Thus, I make an effort to learn every student's name and to encourage their active participation during class.

The primary role of a teacher is as a facilitator, and in that role they should enable students to become responsible for their own learning. I view teaching as a process of encouraging students to make connections between their own experiences and the subject matter. I strive to foster in my students critical thinking skills and problem-solving strategies. Though knowledge of the fundamental course concepts must be covered and mastered by the students, I am more concerned with the student's understanding of those concepts and their ability to apply them in new problem-solving situations. As such, my intent in developing exam questions is not to evaluate whether a student can solve this particular problem, but to determine whether they understand and can apply the concepts required to solve this problem. After all, the chance they will face that exact problem in practice is negligible, but the integration of concepts to solve new problems is vital. As a result, student work is graded with respect to the process used in solving the problem.

Assessment of student performance is a key aspect of teaching, and it is absolutely essential to employ methods that are honest and fair. My main criterion in grading is the determination of whether a particular concept is understood and mastered, rather than if the correct answer to a problem is given. As such, I do assign partial credit to problems based on my evaluation of the depth of understanding shown in the solution provided. So showing insight into the principles will also earn a student more credit. For example, if during the solution process a mathematical mistake is made and the resulting answer is not reasonable, students who identify that this behavior is not feasible will earn greater credit than those who just provide the answer their calculations give. With these things in mind, I think a major part of my role as a teacher is to truly challenge my students and to help them rise to the level of that challenge. At the first class meeting for every course, I state my belief that every student can master the course subject, though some students may find the process easier than others. I explicitly tell them my job is to help them in that process, and I have an open-door policy so students can come see me for individual help. As I believe students learn better when they are involved and excited about the material, I strive to maintain a high level of classroom interaction. The classroom atmosphere is very relaxed so students feel comfortable contributing and asking questions.

### Teaching Responsibilities

I began my career as an assistant professor during the 2010 Fall Semester at the University at Buffalo. I transferred to the University of Texas during the 2015 Fall Semester. Thus, in total, I currently have seven full years of academic teaching experience. At the University at Buffalo, I taught two different undergraduate courses and two different graduate courses. During this time, my average instructor rating for undergraduate courses was 4.6/5.0, and my average instructor rating for graduate courses was 4.6/5.0. (Note that copies of my University at Buffalo (UB) course-instructor surveys are included in the Supplemental Materials folder). I should mention that the average class size of the undergraduate courses at UB is approximately 100 students. As a faculty member at UT, I have placed substantial emphasis on teaching and developing course material. I have taught three courses in my 2 years at UT. A list of these courses, together with information about average class size and placement within our curriculum, is provided below:

- **CE 329 Structural Analysis**  
Undergraduate level, required (Fall 2015, 42 students), (Fall 2016, 44 students)
- **CE 397 (Structural Health Monitoring and Nondestructive Evaluation)**  
Graduate level, (Spring 2016, 15 students), (Spring 2017, 15 students)
- **CE 397 (Probabilistic Analysis and Design)**  
Graduate level, (Spring 2017, 8 students).

CE 397 (Structural Health Monitoring and Nondestructive Evaluation) is a graduate course that I developed with the intent to engage students that span the breadth of the Department: construction, mechanics, geotechnical, structural, and transportation. In spring 2018, I'm planning to broaden the scope of this course to engage graduate students in the Departments of Mechanical, Aerospace, and Petroleum Engineering.

Below, I discuss the specific methods and strategies of my teaching that I incorporate into the classroom. In addition, I discuss my continued effort to improve my teaching and demonstrate this improvement by tracking my teaching evaluations over the past seven years. Outside of the classroom, I strongly believe in mentoring undergraduate and graduate students to enhance their educational experience through research and other activities. I believe the multi-disciplinary nature of my research gives students an uncommon experience within engineering research. Furthermore, through involvement of undergraduate students in laboratory testing and analysis, is a great way to motivate them to pursue graduate studies later on. In addition, I have closely integrated my research with high school activities to encourage younger students to pursue careers in engineering. These activities are also described below.

### Teaching Methods and Strategies

I strive for clarity of presentation of both course policies and course materials. I provide a detailed syllabus to students, outlining course topics, grading policies, and homework submission guidelines.

Class sessions – lecture and discussion: I begin each lecture with a brief summary of the previous class session and a presentation of the lesson objectives. As I believe students learn better when they are involved and excited about the material, I place a strong emphasis on classroom interaction. When examples are solved by the class, they are done together rather than having me stand at the front of the class doing all the work and the students watching. I ask the students to provide the next step and then calculate the required solution. This process also allows students the freedom to ask questions of me. I have found that once students become used to this process, the class becomes much more interesting for

both them and me. In classes having a small number of students, like CE 397 SHM/NDE, students have to teach a lecture on a topic I choose related to the course material. These student-led lessons are taught near the end of the semester. This lecture should contain a minimum of five major sections, including: introduction, fundamental concepts, instrumentation, applications and conclusions. I believe that the process of organizing a lecture for the rest of the class requires that students understand the material at a greater depth than standard homework assignments. Furthermore, this approach allows for students to start exploring issues and developing research-type questions on their own. A component of the lecture is a written report of the results and a discussion of the assumptions made during analysis. In addition, CE 397 SHM/NDE includes laboratory activities to corroborate the theoretical lectures. These laboratory sessions are performed at the Ferguson Structural Engineering Laboratory at the Pickle Research Center.

Homework – level of difficulty, projects, group work: In CE 397 Probabilistic Analysis and Design, I assign homework that encourages a deeper understanding and explanation of results. As such, many questions contain phrases such as "explain..." and "show that..." in combination to traditional numerical problems. I also encourage the students to work in study groups. Working in a group allows them to argue, discuss, and explain things amongst themselves. I utilize the web as a main source of communication with students. All assignments and solutions are posted on the class web site (Canvas), as well as the collection of class emails and announcements.

### Teaching Evaluations and Efforts to Improve Teaching

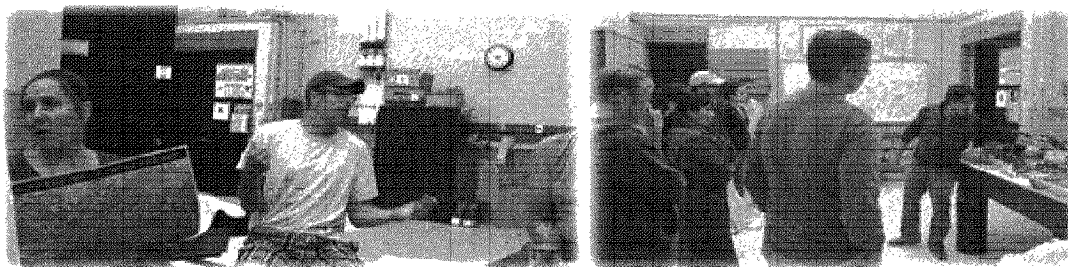
In general, my teaching evaluations over the past seven years, both at UB and UT, have consistently been higher than the department mean. Students usually comment positively on my instruction, noting a number of significant qualities, such as entertaining, encouraging, and supportive. Students always note that they find my courses interesting, appreciate my style of teaching, and make connections between course materials and the "real world." I put a tremendous amount of effort into all of my courses and I think it shows in feedback from students. Students respond well to my instruction and produce some amazing results.

In addition, I believe that as I try to instill in my students an appreciation for the scholarship in our field, I must demonstrate those same principles and strive to keep increasing my knowledge in all areas of my profession as an educator. I must continue to gain new information and skills via conference and workshop attendance as well as affirm myself and inform others of my work. The following is a list of workshops I have participated in to improve my skills as a teacher and faculty mentor.

- 7<sup>th</sup> European Workshop in Structural Health Monitoring, July 2014, Nantes, France
- 11<sup>th</sup> International Conference on Structural Safety & Reliability, June 2013, Columbia University.
- 9<sup>th</sup> International Workshop on Structural Health Monitoring, September, 2013, Stanford University.
- NSF wind energy research workshop, September 2011, University of Massachusetts Lowell.
- 39th Annual Review of Progress in Quantitative Nondestructive Evaluation organized by the Center for Nondestructive Evaluation at Iowa State University, at the University of Vermont, Burlington, July, 2011.
- Short Course in "Nondestructive Evaluation (NDE) of Infrastructures: challenges and opportunities", sponsored by the World Federation of NDE Centers, at the University of Vermont, Burlington, July 16-17, 2011.



I also have a strong interest in integrating research with educational activities targeting K-12 students to create interest and broaden participation of underrepresented groups in engineering. At UB, I collaborated with local K-12 school teachers through an NSF grant, led by UB, Buffalo Public Schools (BPS), Buffalo State College and the Buffalo Museum of Science, called the Interdisciplinary Science and Engineering Partnership (ISEP) (PI: Prof. Gardella, Department of Chemistry at UB). Through ISEP, science and math teachers at 12 middle and high schools in the BPS district had the opportunity to spend a summer conducting interdisciplinary research at the Smart Structures Research Laboratory (SSRL) that I direct. Based on their summer research experiences at the SSRL, teachers were able to develop innovative curriculum modules, to allow students to gain a better understanding of earthquakes, and improve earth science education. In fact, news broadcasts showing collapsed buildings, broken bridges and smashed cars help students visualize the hazardous nature of earthquakes. However, students struggle with understanding how scientists can tell exactly when and where a rupture has occurred because earthquake faults so rarely rupture the surface of the earth and few students understand how scientists investigate earthquakes through analysis of data collected using technology devices (i.e., seismometers) from around the world. I used the similarity between seismic waves and acoustic emissions (AE) to illustrate to students: (1) the main components of a seismogram (e.g., differences between P-waves and S-waves), and (2) how scientists can locate the epicenter of an earthquake. These activities will encourage secondary school students to think like engineers, understand science concepts and spark their interest in engineering careers. Figure 1 shows the research activities in my lab during the summer 2012 and 2013.



**Figure 1** – Research activities in the Smart Structures Research Laboratory (SSRL) of teachers from the Buffalo Public school during the summer 2012 and 2013.

## Candidate's Summary of Teaching

Salvatore Salamone

**Table 1. Summary of Course-Instructor Ratings**

<b>Metric</b>	<b>Value</b>
Total # of students taught in organized courses	124
Average instructor evaluation for UG courses	4.85
Average instructor evaluation for Grad courses	4.67
Average course evaluation for UG courses	4.55
Average course evaluation for Grad courses	4.30

**Table 2. Course Schedule by Semester in CAEE since 2015 with number of students indicated**

<b>Course</b>	<b>F 15</b>	<b>S 16</b>	<b>F 16</b>	<b>S 17</b>
<b>CE 329</b>	42		44	
<b>CE 397</b>		15		15
<b>CE 397</b>				8

**Table 3. Summary of Graduate Students Currently Supervised at UT Austin**

<b>Student Name</b>	<b>Co-Supervisor*</b>	<b>Degree</b>	<b>Start Date</b>	<b>Date Reached Candidacy</b>	<b>Date Expected to Reach Candidacy</b>	<b>Expected Graduation Date</b>
Arvin Ebrahimkhanlou		PhD	08/2015	05/2017		Spring 2018
Brennan Dubuc		PhD	08/2015		Fall 2019	Fall 2020
Korkut Kaynardağ		PhD	08/2016		Spring 2019	Spring 2021
Apostolos Athanasiou	Trevor Hrynyk (CAEE)	PhD	09/2016		Spring 2019	Spring 2020
My Vu		MS	09/2017			Spring 2019

Salvatore Salamone  
 Department of Civil, Architectural and Environmental Engineering  
Course Rating Averages

Tenure candidates must include all years in rank.

All other candidates must include, at minimum, the three most recent years.

What source was used to complete this chart? My CIS

**CE 329: Structural Analysis**

Semester	Class Size	Number of Responses	Instructor Rating	Course Rating
Fall 2015	42	31	4.9	4.6
Fall 2016	44	38	4.8	4.5
<b>Mean</b>	<b>43</b>	<b>35</b>	<b>4.85</b>	<b>4.55</b>

**CE 397: Str Hlth Monitor/NonDstrc Eval**

Semester	Class Size	Number of Responses	Instructor Rating	Course Rating
Spring 2016	15	12	4.9	4.8
Spring 2017	15	15	4.7	4.0
<b>Mean</b>	<b>15</b>	<b>14</b>	<b>4.80</b>	<b>4.40</b>

**CE 397: Probabilistic Analysis and Design**

Semester	Class Size	Number of Responses	Instructor Rating	Course Rating
Spring 2017	8	7	4.4	4.1
<b>Mean</b>	<b>8</b>	<b>7</b>	<b>4.40</b>	<b>4.10</b>

## Course Instructor Survey Results

Name/EID: SALAMONE, SALVATORE (ss76649)  
 Department: Civil Engineering  
 Report Date: 07-21-2017

Semester	Unique Number	Course Number	Course Title	Instruction Type	Enrollment	No. of Surveys Returned	Avg. Overall Instructor Rating	Avg. Overall Course Rating
Fall 2015	15415	C E 329	STRUCTURAL ANALYSIS	Organized	42	31	4.9	4.6
Spring 2016	15770	C E 397	STR HLTH MONITOR/NONDSRC EVAL	Organized	15	12	4.9	4.8
Fall 2016	15490	C E 329	STRUCTURAL ANALYSIS	Organized	44	38	4.8	4.5
Spring 2017	15715	C E 397	PROBABILISTIC ANLY AND DSGN	Organized	8	7	4.4	4.1
Spring 2017	15740	C E 397	STR HLTH MONITOR/NONDSRC EVAL	Organized	15	15	4.7	4

Peer Evaluation of Teaching: **Salvatore Salamone, PhD**

Evaluator: Richard L. Corsi, PhD, P.E.



Department Chair – Civil, Architectural and Environmental Engineering

Joe J. King Chair in Engineering #2

Member, Academy of Distinguished Teachers

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### Overview

I attended Dr. Salvatore Salamone's lecture for CE329 – *Structural Analysis* in ECJ 7.208 on November 29<sup>th</sup>, 2016. This course is required of all undergraduate students in both the civil and architectural engineering degree programs in the Department of Civil, Architectural and Environmental Engineering. The course deals with classical methods of analysis for determinate and indeterminate structures under stationary and moving loads. Approximately 39 students attended the lecture. The main topic covered in the lecture was member stiffness and related stiffness factors. Most of the lecture focused on a single example problem with intermittent discussions related to steps used in solving the problem. The following evaluation focuses on areas of teaching for which Dr. Salamone is doing well (positive teaching characteristics), some areas where he might improve, and student comments during a ten-minute meeting with the entire class in the absence of Dr. Salamone after his lecture.

I met with Dr. Salamone on January 26<sup>th</sup> 2017 to discuss this evaluation.

### Positive Teaching Characteristics

- Dr. Salamone showed up to lecture early and effectively mapped out the problem statement and related information needed to solve the problem that was addressed in lecture.
- Dr. Salamone started his lecture by clearly describing the goal of the lecture. He was then very clear in setting up the problem to be solved.
- Dr. Salamone has excellent voice volume, and projects well when he turns to write on the board. He has very good voice inflections when he wants to stress a point. He also has very good eye contact with students.
- Dr. Salamone writes beautifully on the white board. Every letter, number, and subscript was clear and large enough to be seen from the back of the classroom, where I was sitting.
- Dr. Salamone had complete command of the class. I observed no students using their laptops or cell phones, or speaking to one another during lecture. They were focused entirely on Dr. Salamone.
- Dr. Salamone very effectively reinforced important concepts to students throughout his lecture by raising his voice and making statements like "This is the main principle."
- In solving the problem that constituted the entire lecture, Dr. Salamone did a very nice job of defining each step and pausing to discuss interim results.

- Dr. Salamone responded very positively to student questions. He has good rapport with his students. I was impressed that on several occasions Dr. Salamone addressed students by their names.

#### **Areas for Improvement**

I noted just two possible areas for improvement, each of which I consider minor and relatively easy to address in the future:

- Dr. Salamone should consider asking one or two questions of students at the start of lecture to prime them for the new lecture. He might use the material covered in the previous lecture as a basis for these questions, which would also address a post-lecture student comment listed at the end of this review statement.
- Units were dropped from problem solution and at times Dr. Salamone should remind students of what the units are and their importance.

#### **Discussion with Students in Absence of Dr. Salamone**

Dr. Salamone agreed to finish his lecture ten minutes early so that I could speak with his class in his absence. I began by posing a question related to the lecture that the class had just been delivered relative to an average lecture by Dr. Salamone. I asked whether the lecture was better, worse, or about the same as an average "Salamone lecture?" An overwhelming majority felt that the lecture was average (typical) for Dr. Salamone. The students felt that Dr. Salamone's lectures are very consistent, and consistently good.

I then asked what Dr. Salamone does very well as a teacher. The main responses to this question were that Dr. Salamone cares about them and is available to students when they have questions. He is on the same page with his teaching assistant. He is really good at answering student questions in lecture, and also pulling questions from them during lecture.

I asked whether the class felt that Dr. Salamone could improve in any areas. One student commented that Dr. Salamone might consider more of a refresher (of the past lecture) at the start of each new lecture. Others seemed to agree. Another commented that it would be beneficial if Dr. Salamone would post his notes on-line. Another commented that the room where the teaching assistant is housed is too small.

#### **Summary**

This is my second peer review of Dr. Salamone in the classroom, both for CE329 in successive years. Based on my observations in the classroom and discussions with Dr. Salamone's class, it is clear that he is a very good teacher in the classroom, and is someone who cares about teaching and (even more importantly) his students. The Department of Civil, Architectural and Environmental Engineering is fortunate to have Dr. Salamone teaching our students.



Peer Evaluation of Teaching: **Salvatore Salamone, PhD**

Evaluator: Richard L. Corsi, PhD, P.E.

Department Chair – Civil, Architectural and Environmental Engineering

ECH Bantel Professor for Professional Practice

William David Blunk Memorial Professor

Member, Academy of Distinguished Teachers



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### Overview

I attended Dr. Salvatore Salamone's lecture in CE329 -- *Structural Analysis* on November 18<sup>th</sup>, 2015. This course is required of all undergraduate students in both the civil and architectural engineering degree programs in the Department of Civil, Architectural and Environmental Engineering. The course deals with classical methods of analysis for determinate and indeterminate structures under stationary and moving loads. The lecture was held in ECJ 7.208, and approximately 33 students attended the lecture. The main topic covered in the lecture was the application of slope deflection equations to beam structures. Most of the lecture focused on an example problem with intermittent discussions related to steps used in solving the problem. The following evaluation focuses on areas of teaching for which Dr. Salamone is doing well (positive teaching characteristics), some areas where he might improve, and student comments during a five-minute meeting with the entire class in the absence of Dr. Salamone.

*I met with Dr. Salamone on November 18<sup>th</sup> 2015 to discuss this evaluation.*

### Positive Teaching Characteristics

- Dr. Salamone began his lecture with an approximate two minute summary of material covered in the lead up to his lecture. He also wrote the objective of the lecture on the board so that students had a clear understanding of what they should learn from the lecture.
- Dr. Salamone writes very clearly on the glass board. His written text and numbers are not too small and are very clear, even to a 55 year old department chair sitting in the back of the classroom. He also used all three panels of the glass board effectively, assuring the steps in the solution were not erased during the entire lecture.
- Dr. Salamone developed a clear problem statement prior to engaging the students in the example problem completed during the lecture.
- During the problem solution, Dr. Salamone referred to past lecture material to bridge the current lecture to past lectures, a characteristic that was praised by students when I spoke with them in his absence.
- During the problem solution, Dr. Salamone did an excellent job of clearly identifying new steps in the solution process as well as explaining how some terms in the equations used to

solve the problem could be dropped from the solution.

- Dr. Salamone has excellent voice volume and cadence, with clear intonation when he wants to emphasize an important point.
- Dr. Salamone has excellent eye contact with his class.
- Dr. Salamone's demeanor in the classroom is professional and respectful of students. He offers support when students ask questions, makes sure that everyone else in the classroom understands the questions, and has very good rapport with his class.

### **Areas for Improvement**

I noted just four possible areas for improvement, all of which I consider minor and relatively easy to address in the future:

- Dr. Salamone waited until most of the students had arrived in the classroom to write on the glass board. He started by writing the objective of the lecture and the two main equations (slope deflection equations) that would be used during lecture. This took about two minutes, during which time his back was turned and he did not speak with the students. I suggest either speaking with the students during this time to let them know that "the objective of the lecture is ..", etc. or to take time before the students show up to write these on the board. That would buy back two additional minutes of lecture time. Several minutes later an additional three minutes was spent writing out the problem statement in a similar fashion. If done before lecture, this could add five minutes to the 50 minute lecture for additional questions, etc.
- Dr. Salamone asked a lot of specific questions to his class during the lecture, but perhaps 1/3 of the time provided the answer almost immediately. Waiting a few second for students to respond might be beneficial to students (and could make use of the five minutes that are gained back based on the recommendation above).
- Thirty minutes into the lecture Dr. Salamone asked if there were any questions. At that point the students asked most of the questions they posed during the lecture. It would benefit the students if Dr. Salamone designed 3 or 4 of these open question times during lecture. I note that when I spoke with students in Dr. Salamone's absence they mentioned that he usually does ask "Are there any questions?" more frequently.
- Although very subtle, there was one point in the lecture when a student asked about the sign of a moment on the beam under consideration in the example problem. Dr. Salamone gave a perfectly valid mathematical response to the question, and the student who asked the question seemed satisfied. However, the answer to the question could have also been addressed by looking at the physical layout of the load on the beam, and I imagine there would have been some benefit to also refer to the physical layout of the load and why the mathematical solution makes sense from a physical standpoint.

#### **Discussion with Students in Absence of Dr. Salamone**

Dr. Salamone agreed to finish his lecture a few minutes early so that I could speak with his class in his absence. I began by posing a question related to the lecture the class had just been delivered relative to an average lecture by Dr. Salamone. I asked whether the lecture was better, worse, or about the same as an average "Salamone lecture?" An overwhelming majority felt that the lecture was average (typical) for Dr. Salamone. I then asked what Dr. Salamone does very well as a teacher. Responses ranged from his encouragement of and willingness to answer questions, his ability to build on basics throughout the semester, his responsive to emails from students, and his general availability to students. I asked whether the class felt that Dr. Salamone could improve in any areas. No student had a single complaint about Dr. Salamone. However, in response to this question several students stated that Dr. Salamone was either the best or one of the best teachers that they have had at the University of Texas at Austin.

#### **Summary**

Based on my observations in the classroom and discussion with Dr. Salamone's class, it is clear the Dr. Salamone is a very good teacher in the classroom, and is someone who cares about teaching and (even more importantly) his students. The Department of Civil, Architectural and Environmental Engineering is fortunate to have Dr. Salamone teaching our students.

09/02/17  
PROGRAM GSPBFRP3

THE UNIVERSITY OF TEXAS AT AUSTIN  
OFFICE OF GRADUATE STUDIES  
COMMITTEE REPORT, MASTERS AND DOCTORAL  
FOR SALAMONE, SALVATORE

PAGE: 109

*Civil Architectural & Environmental  
Engineering*

NAME	EID	LAST SEM	COMM POSITION	MAST OR DOCT	DEGREE	FIELD	YYS	2ND DEGREE	FIELD	YVS
EBRAHIMKHANLOU, ARVIN	ae24254	179	CHAIR	D						

**Summary of Graduate Students Currently Supervised at UT Austin**

<b>Student Name</b>	<b>Co-Supervisor*</b>	<b>Degree</b>	<b>Start Date</b>	<b>Date Reached Candidacy</b>	<b>Date Expected to Reach Candidacy</b>	<b>Expected Graduation Date</b>
Arvin Ebrahimkhanlou		PhD	08/2015	05/2017		Spring 2018
Brennan Dubuc		PhD	08/2015		Fall 2019	Fall 2020
Korkut Kaynardağ		PhD	08/2016		Spring 2019	Spring 2021
Apostolos Athanasiou	Trevor Hrynyk (CAEE)	PhD	09/2016		Spring 2019	Spring 2020
My Vu		MS	09/2017			Spring 2019

**List of Postdoctoral Fellows Supervised at the University at Buffalo**

1. **Ehsan Dehghanniri**, 09/2014-11/2014, PhD University at Buffalo, 09/2014
2. **Alireza Farhidzadeh**, 09/2014-02/2015, PhD University at Buffalo, 09/2014.



#### **4. RESEARCH, PUBLICATIONS, & OTHER EVIDENCE OF SCHOLARSHIP/CREATIVITY**

##### **Budget Council Statement**

Prepared by Todd A. Helwig and Eric B. Williamson



Dr. Salamone's performance on research, publications, and other scholarship was reviewed by Professors Helwig and Williamson. The evaluation was based upon Dr. Salamone's record of research funding and completed students, publications, the impact of his research, and his stature within the academic and professional communities. His evaluation was based upon the level of performance of assistant professors that are being considered for promotion to associate professor with tenure at peer institutions in the US.

Dr. Salamone's area of specialization is Structural Health Monitoring (SHM) and Nondestructive Evaluation (NDE). The general focus area of his research within the SHM and NDE realms is the development of sensing and processing capabilities for structural systems and elements to provide real-time indications of their performance and condition. His work in the SHM/NDE area includes both fundamental and applied techniques utilizing guided-ultrasonic waves, acoustic emission, and vision-based inspection. Although he is a member of the structural engineering group within the Department of Civil, Architectural and Environmental Engineering (CAEE), his research is cross-disciplinary with applications in the civil, mechanical, and electrical engineering areas.

Dr. Salamone began his academic career in a tenure-track position as an assistant professor at the University at Buffalo, SUNY (UB-SUNY) in 2010 before joining the faculty of CAEE at the University of Texas at Austin (UT Austin) in 2015. He has built a very strong research record over the past seven years at UB-SUNY and UT Austin. This statement highlights his combined record at the two institutions as well as his record while in rank at UT Austin.

Dr. Salamone has established a good record of research funding through several national and state organizations. The total funding levels at UB-SUNY and UT Austin is approximately \$1.97M and his share has been approximately \$1.35M on 9 different grants/contracts. Considering that Dr. Salamone has only been at UT Austin for two years, he has quickly established his research program with a total funding level of approximately \$1.5M, with his share being \$0.9M. He has a good balance of funding from both federal and state organizations. His federal funding has come from a large number of sources including the Office of Naval Research, the National Science Foundation, and the US Department of Transportation. Dr. Salamone has served as the PI on 8 of the 10 studies. This is an impressive level of funding and project leadership that exceeds the norm in the US for an assistant professor in civil engineering.

Dr. Salamone has demonstrated that he can lead an independent research team, graduating 3 MS students and 3 PhD students at UB-SUNY. At UT Austin, he has completed 1 MS student and has a PhD student scheduled to graduate in December of 2017. He has three other PhD students in progress at UT Austin. His abilities to complete students is at or above the norm for an assistant professor in CAEE.

Dr. Salamone has a total of 42 career refereed archival journal publications in print or accepted. While in rank at UB-SUNY he had 21 journal articles and at UT Austin he has had 9 journal articles in-print or accepted. His Google Scholar H-Index of 17 and citation count of 932 is an indicator of the strong

Salvatore Salamone

Department of Civil, Architectural  
and Environmental Engineering

contributions of his work in the SHM/NDE area since many other researchers are citing his contributions. His publications and citations are above the norm for assistant professors in CAEE.

The high quality of Dr. Salamone's research and publications is evidenced by the awards he has received. In 2012, he received a Best Paper Award at the 54<sup>th</sup> Acoustic Emission Working Group Meeting. One of his undergraduate research assistants received the 2014 American Society for Nondestructive Testing Robert B. Oliver Scholarship, an award given to an undergraduate student with the most outstanding manuscript on nondestructive testing research. An indicator of the strength of his contributions as well as his strong potential is the 2014 Achenbach Medal from the *Journal of Structural Health Monitoring*. This award recognizes an individual, within 10 years of receiving their PhD, who has made outstanding contributions to the advancement of the SHM field. It is particularly impressive that he received this award only 7 years after receiving his PhD, and only 4 years after beginning his tenure track appointment.

The cross-disciplinary impact of Dr. Salamone's research is evident in the letters from the external reviewers that include faculty members from Departments of Civil Engineering, Aerospace Engineering, and Materials Science and Mechanics. Three of his reviewers have joint appointments in Mechanical Engineering Departments at their universities, while another has a joint appointment in Electrical Engineering. The letters from external reviewers were very strong and pointed to the significant contributions of Dr. Salamone's research. All of the letters from his reviewers were extremely positive, and statements from any of these letters could be cited to demonstrate his outstanding research performance. However, the following two quotes point to his excellent contributions to the SHM/NDE areas as well as the strong reputation he has built at such an early stage in his career:

"Having closely followed Dr. Salamone's published work in the general area of structural health monitoring (SHM) and non-destructive evaluation (NDE) over the past decade, I can unequivocally state that he is an intrepid researcher who has amassed an illustrious record of pioneering research in the application of acoustic and ultrasonic stress waves to detect damage and deterioration in civil infrastructure systems. He is considered a leading scholar in the subject area because he has distinguished himself by pursuing some of the most technically challenging research problems in damage detection using body waves while simultaneously illustrating new means of application of these methods to real, operational civil infrastructure systems." (Professor Lynch, Dept. Chair Civil and Environmental Engineering, University of Michigan)

(Regarding his selection for Achenbach Medal) "...That fact that he won at such an early stage of his career is a strong indication of the originality and importance of his work. It is also an indication that he is well above his cohorts within 10 years of their PhD working in the SHM area. If you believe in numbers his H Index (17) and number of citations (930) are high for researchers within 10 years of their PhD working in SHM." (Professor Daniel Inman, Chair of Aerospace Engineering Department, University of Michigan)

Dr. Salamone has an outstanding reputation and track record in all areas of Research and Scholarship. Despite the significant demands associated with moving and reestablishing a research program, his research production seemed unaffected by the difficulties associated with the move. Dr. Salamone's performance and reputation has brought a strong reputation in the SHM/NDE areas to UT Austin.

Salvatore Salamone

Department of Civil, Architectural  
and Environmental Engineering

### FIVE MOST SIGNIFICANT PUBLICATIONS

- [UB-08] Dehghan Niri, E., Salamone, S., (2012). “A probabilistic framework for acoustic emission source localization in plate-like structures”, *Smart Materials and Structures*, Vol. 21(3), 035009, 16 pp.
- [UB-19] Dehghan Niri, E., Salamone, S., (2015). “A multi-helical ultrasonic imaging approach for the structural health monitoring of cylindrical structures”, *Structural Health Monitoring*, Vol. 14(1), pp.73-85.
- [UB-14] Farhidzadeh, A., Dehghan Niri, E., Moustafa, A., Salamone, S., Whittaker, A., (2013). “Damage assessment of reinforced concrete structures using fractal analysis of residual crack patterns”, *Experimental Mechanics*, Vol. 53(9), pp. 1607-1619.
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## RESEARCH STATEMENT

I am a researcher within the discipline of structural engineering, with special emphasis on structural health monitoring (SHM) and nondestructive evaluation (NDE). I have built my career on developing innovative SHM and NDE methods for the next generation of “intelligent structures”, that is, structures with sensing and processing capabilities to enable real-time state awareness. My research profile consists of fundamental and applied research combining various types of NDE methods (e.g., guided ultrasonic waves, acoustic emission, and vision-based inspection), and data processing techniques (e.g., probability-based and time-frequency analysis). I place particular emphasis on the effective characterization and propagation of uncertainty in sensor measurements, and fusion of noisy data to reliably identify and characterize damage in a broad range of complex structural systems, including aerospace panels, reinforced concrete structures, and pipelines. I currently work on problems that span the domains of structural, mechanical and electrical engineering. In particular, as the only faculty member in the Department of Civil, Architectural, and Environmental Engineering at UT who is an active researcher in the field of SHM, I have established the Smart Structures Research Group (SSRG), and I have engaged other faculty in the department to add an SHM/NDE dimension to their research projects. The overarching goal of this group is to pioneer scientific discovery and advance the next-generation of technologies and methodologies for the monitoring and protection of infrastructure systems. My research is highly interdisciplinary in nature and requires implementation of concepts of dynamics and vibrations, wave propagation, digital signal processing, data acquisition systems and extensive knowledge of sensors and statistical pattern recognition methods. I believe the multi-disciplinary nature of my research gives students an uncommon experience within engineering research.

### Current research in the SSRG

#### Toward integrated structural health monitoring systems for navy structures

The objective of this research is to design, implement and validate a novel biologically inspired probabilistic framework to enhance accuracy and capabilities of ultrasonic stress wave techniques for the SHM of waveguide-like structures, which are ubiquitous in Navy structures. The uniqueness of the framework resides in the development of a physics-based computational method that leverages the large number of echoes and reverberations present in recorded ultrasonic waveforms to enable damage diagnostics and characterization while using fewer transducers than conventional techniques. Inspired by echolocating animals (e.g., bats can identify objects using few anatomical “transducers”, that is, the mouth for transmission and the ears for reception), the approach (hereafter referred to *MEWR: Multiple Edge Wave Reflections analysis*) represents a change in paradigm – multiple reflections, considered undesirable in current techniques, are leveraged to detect and evaluate structural degradation while using a smaller number of sensors compared to conventional ultrasonic-based techniques (*Pub# UT-1, 3*). Some results are shown in Figure 1. The research work is currently supported by the Office of Naval Research (ONR).

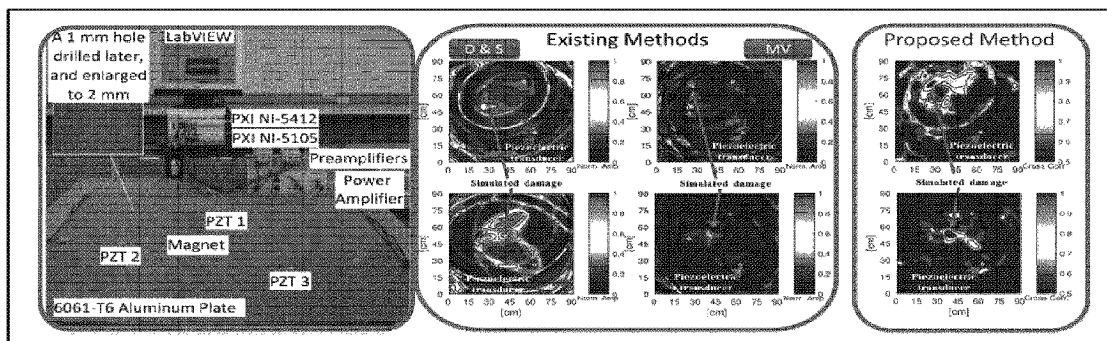
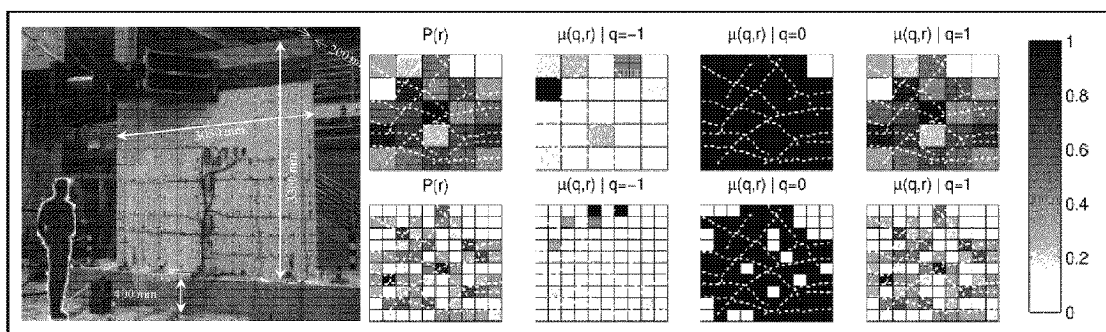


Figure 1. MEWR analysis in active mode: preliminary results



A vision-based technique for damage assessment of civil infrastructure systems

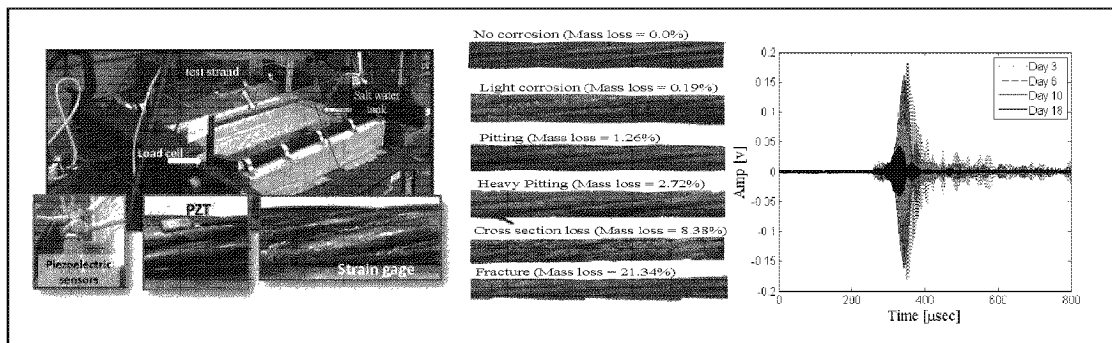
The objective of this project is to create a vision-based SHM system for the automatic assessment of reinforced concrete structures. The system is based on the fractal analysis of images taken in the visible and infrared electromagnetic spectrum, and is capable of retrieving surface crack patterns that can provide a quantitative measure of damage. The database from the Network for Earthquake Engineering Simulation Project Warehouse will be used to validate the algorithm. Fractal analysis is a relatively novel mathematical tool that has been used successfully in many fields, including biology and physical sciences. However, its application in the SHM community has been modest and, generally speaking, its theoretical background has not been fully investigated. My research team and I plan to validate the hypothesis that fractal analysis can be used for nondestructive evaluation methods and can provide crack patterns. Crack patterns can be used to assess structural damage (*Pub# UT-5, 6, 8, UB-8*). This research has been supported primarily through an NSF award, and recently by the Texas Department of Transportation. Some results are shown in Figure 2.



**Figure 2.** Pilot tests: (a) Experimental setup; (b) Fractal Dimension-based damage features

Corrosion damage assessment of post-tensioned concrete structures

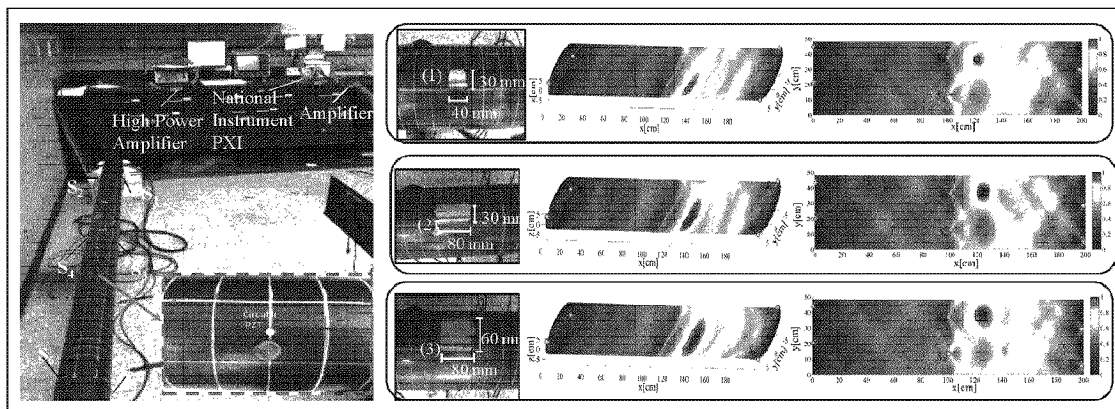
In recent years, post-tensioning (PT) has progressively become the predominant choice for pre-stressed concrete construction, ranging from commercial and residential buildings, bridges, and parking structures to containment vessels for nuclear power plants. Evaluation of steel strands in PT structures is technically challenging. The general inaccessibility of the strands makes evaluation difficult, costly and often inconclusive. Several nondestructive evaluation (NDE) techniques have been developed to address this issue in the past few years. However, no well-established NDE technique currently exists to provide reliable information on the degradation of the prestressing strands. The goal of this project is to design and implement an innovative monitoring system for corrosion damage assessment of steel tendons in PT structures. The monitoring system is based on arrays of piezoelectric transducers that generate and receive guided ultrasonic waves (GUW) throughout the tendon. Accelerated corrosion tests are currently underway in my lab to provide insights on the underlying corrosion mechanisms, including temporal variations in GUW features (*Pub# UT-7, UB-1, 5*). Some results are shown in Figure 3. These results have been featured in popular magazines such as *ASCE's Civil Engineering*, *Engineering News-Record*, *In Compliance Magazine*, *Electronic Products*, and *PaintSquare*. The research is currently supported by the Texas Department of Transportation, and previously by the University Transportation Research Center 2 and the SUNY Research Foundation.



**Figure 3.** Accelerated corrosion test set-up: (a) experimental setup; (b) GUV preliminary results

#### Toward permanently installed pipeline monitoring systems

Corrosion is one of the leading causes of failures in pipelines throughout the United States. Since corrosion processes are cumulative, periodic inspection is often not the optimal procedure for identifying areas requiring timely action to mitigate corrosion. There is a need to change from periodic inspections, where the time intervals are often established on the basis of limited to no knowledge of likely corrosion, to a more cost-effective condition-based inspection. This paradigm shift can be achieved by equipping pipelines with sensing and analysis systems to enable real-time, continuous and autonomous monitoring. Sensor reliability is absolutely critical. If automated inspections are to replace human inspections, we must have absolute confidence in their capability to identify and locate damage. In response to this national need, this project aims to design and implement an innovative monitoring system for corrosion-damage assessment of pipelines. The monitoring system is based on permanently installed arrays of low profile piezoelectric transducers to generate and receive GUV throughout the pipeline. Advanced signal processing algorithms based on probabilistic concepts will be developed to perform the critical tasks of: 1) damage localization (e.g., leaks), and 2) damage characterization (e.g., defect sizing) (*Pub# UT-2, 4 UB-2, 3, 4*). The research work has been supported by the USDOT/ Pipeline and Hazardous Materials Safety Administration (PHMSA). Some preliminary results are shown in Figure 4.



**Figure 4.** Pilot tests: (a) Experimental setup; (b) Multi-helical guided wave tomography

#### **Research Funding and Accomplishments**

My research as an assistant professor has been consistently funded by federal and state agencies. Federal agencies include the National Science Foundation, Office of Naval Research, United States Department of Transportation, and Pipeline Hazard Management Safety Administration. State agencies that have funded my work include the Texas Department of Transportation, the University Transportation Research



Center 2, and the New York State Pollution Prevention Institute. My career research funding has been ~\$2M, of which ~\$1.4M has been my research group's share. I have been the *sole* principal investigator on most of these grants (2/4 at UT and 5/6 at UB). I should note that I'm pursuing a diversity of funding sources, including: Department of Energy, Navy, National Institute of Standards and Technology (NIST), and Federal Rail Administration (FRA). To date, I have graduated three Ph.D. students, and I'm currently supporting four Ph.D. students on various research projects. In the last seven years, I have published or had accepted for publication thirty journal publications in top scholarly journals in my field including: *Ultrasonics*, *Smart Material and Structures*, *Structural Health Monitoring*, *Structural Control and Health Monitoring*, and *Experimental Mechanics*. My research thus far has had measurable impact on the field and is cited by scholars across fields. My h-index is 17 with a total career citation count of 932, where 852 of the citations have been made between 2012 and 2017. The first publication with my first Ph.D. student as co-author (*UB-14*), has been cited more than 60 times since 2012, and my i-10 index (papers cited more than 10 times) is 25; 18 out of the 25 of these papers were published during my tenure as an assistant professor (both at UT and UB). This scholarly effort has been recognized by the 2014 Achenbach Medal, an international award that recognizes a young investigator who has made an outstanding contribution to the field of structural health monitoring.

### Future Research Plan

The focus of my research will continue to be in the structural engineering field, with special emphasis on structural health monitoring and nondestructive evaluation. As a faculty member, I would like to develop a strong program encompassing the application of new sensor technologies with data processing and automatic pattern recognition for the SHM/NDE of civil, mechanical and aeronautical structures. To sustain my research program, I plan to continue to seek funding from different federal and state agencies (e.g., the Department of Energy, the Department of Homeland Security, the Federal Highway Administration, the Texas Department of Transportation, etc.), as well as industry. For instance, I'm excited about a new project sponsored by the ExxonMobil (\$200K) that is supposed to start in the next couple of months. The objective of this grant will be to develop a SHM technology for detecting, evaluating and monitoring corrosion in oil pipelines. I'm also expecting to receive a grant (\$100K) from the Federal Rail Administration sometime this Fall 2017. The objective of this grant will be to show the capability of a novel diagnostic technology, currently under development in my research group, for the detection of internal defects in railroad tracks. In addition, I would like to create a new paradigm for the NDE/SHM of infrastructure systems based on Augmented Reality (AR). AR is a disruptive technology in which the live view of a real-world environment is enhanced by virtual (interactive) overlay techniques. The key idea of the research is that, by exploiting the overlay of virtual images onto real-world field of vision, engineers could infer the presence of anomalies from the observation of a single frame or a video sequence. I've recently submitted a proposal to the UT *ConTex* program. The ConTex office was established by the UT System to support a program of cooperation with Mexico's National Council of Science and Technology. This research is a collaborative effort between my group and the Universidad Michoacana de San Nicolás de Hidalgo, (PI: Dr. Javier-Ramón Sotomayor-Castellanos), and is serving as a suitable platform to establish and expand my collaborations internationally. SHM/NDE research is inherently interdisciplinary, and thus necessitates developing effective collaboration with experts having complementary expertise. I will foster new collaborations, particularly with ECE and ME. Over the last semester, I have been having discussions with Dr. Andrea Alu' (ECE), on ways to apply metamaterials and plasmonics concepts for novel SHM/NDE devices. Within ME and CAEE, I'm part of a team led by Dr. William O'Brien (CAEE) and Carolyn Seepersad (ME) which aims to develop the next generation of 3D printing technology. We have been meeting regularly during this academic year, and our preliminary discussions on new NDE techniques for 3D printing applications will soon come to fruition. For instance, a journal paper has been recently submitted, and we have received an internal grant (\$135K) to build, integrate, and demonstrate a robotic workstation capable of 3D printing freeform concrete structures. All these research topics have significant potential to attract funding from NIST, NSF, DOD, and other funding agencies. I am extremely excited to continue this journey with my UT family.

## Candidate's Summary on Research

Salvatore Salamone

**Table 1. Research Summary while in rank at the University of Texas at Austin**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	09 / 42
Peer-reviewed conference proceedings (in rank and total)	06 / 44
Number of journal papers in rank with supervised student(s) from UT as co-author	5
Total citations of all publications (career) from ISI Web of Knowledge	472
h-index (career) from ISI Web of Knowledge	13
Total citations of all publications (career) from Google Scholar or Publish or Perish	932
h-index (career) from Google Scholar or Publish or Perish	17
Total external research funding raised in rank at UT	\$1,498,898
Total external research funding raised in rank at UT (candidate's share)	\$906,497
Total number of external grants/contracts awarded in rank at UT	4
Number of external grants/contracts awarded in rank as PI at UT	2

**Table 2. External Grants and Contracts Awarded at the University of Texas at Austin**

<b>Role of Candidate and Co-Investigators</b>	<b>Title</b>	<b>Agency</b>	<b>Project Total</b>	<b>Candidate's Share</b>	<b>Percentage</b>	<b>Grant Period</b>
PI: Salvatore Salamone	Toward Integrated Structural Health Monitoring Systems for Navy Structures	Office of Naval Research	\$300,000	\$300,000	100%	04/01/2017-02/29/2020
PI: Salvatore Salamone	A vision-based technique for damage assessment of civil structures	National Science Foundation	\$179,798	\$179,798	100%	07/01/2015-07/31/2016
PI: Trevor Hrynyk, CAEE Co-PI: Salvatore Salamone Co-PI: Oguzhan Bayrak, CAEE	Evaluation of Structural Cracking in Concrete	Texas Department of Transportation	\$497,102	\$165,700	33%	01/01/2016-08/31/2018
PI: Raissa Ferron, CAEE Co-PI: Salvatore Salamone	Evaluating Long-Term Durability and Performance of Prestressed Concrete Beam with Extensive Surface Cracking	Texas Department of Transportation	\$521,998	\$260,999	50%	01/01/2016-08/31/2018
<b>TOTAL</b>			<b>\$1,498,898</b>	<b>\$906,497</b>		

**Table 3. Research Summary while in rank at the University at Buffalo**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	21 / 42
Peer-reviewed conference proceedings (in rank and total)	16 / 44
Number of journal papers in rank with supervised student(s) from UB as co-author	18
Total citations of all publications (career) from ISI Web of Knowledge	472
h-index (career) from ISI Web of Knowledge	13
Total citations of all publications (career) from Google Scholar or Publish or Perish	932
h-index (career) from Google Scholar or Publish or Perish	17
Total external research funding raised in rank at UB	\$459,424
Total external research funding raised in rank at UT (candidate's share)	\$434,424
Total number of external grants/contracts awarded in rank at UB	6
Number of external grants/contracts awarded in rank as PI at UB	6

**Table 4. External Grants and Contracts Awarded the University at Buffalo**

<b>Role of Candidate and Co-Investigators</b>	<b>Title</b>	<b>Agency</b>	<b>Project Total</b>	<b>Candidate's Share</b>	<b>Percentage</b>	<b>Grant Period</b>
PI: Salvatore Salamone	Toward permanently installed pipeline monitoring systems	Pipeline & Hazardous Materials Safety Administration	\$146,000	\$146,000	100%	08/01/2013-06/30/2015
PI: Salvatore Salamone	A vision-based technique for damage assessment of civil structures	National Science Foundation	\$115,424	\$115,424	100%	08/01/2013-06/30/2015
PI: Salvatore Salamone Co-PI: Guangwen Zhou, State University of New York at Binghamton	Collaborative research to advance scientific knowledge of the mechanism of corrosion in civil infrastructures	State University of New York (SUNY) Research Foundation	\$100,000	\$75,000	75%	12/01/2012-11/30/2014
PI: Salvatore Salamone	Corrosion damage assessment of post-tensioned concrete structures	United States Department of Transportation (through the University Transportation Research Center 2	\$60,000	\$60,000	100%	12/22/2011-02/28/2013
PI: Salvatore Salamone	Smart lifeline systems for improving water and energy efficiency	The New York State Pollution Prevention Institute	\$30,000	\$30,000	100%	03/01/2013-09/30/2013
PI: Salvatore Salamone	Revision of graduate course CIE500S "Introduction to nondestructive evaluation	The American Society of Nondestructive Evaluation	\$8,000	\$8,000	100%	05/01/2011-06/01/2012
<b>TOTAL</b>			<b>\$459,424</b>	<b>\$434,424</b>		

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SSRLUB@gmail.com


## Salvatore Salamone

Department of Civil, Architectural and Environmental Engineering, University of Texas at Austin

Structural Health Monitoring, Nondestructive Evaluation

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### Google Scholar

Citation indices

	All	Since 2012
Citations	932	852
h-index	17	16
i10-index	25	23



Title	+	Add	More	1-20	Cited by	Year
Temperature effects in ultrasonic Lamb wave structural health monitoring systems					137	2008
F Lanza di Scalea, S Salamone The Journal of the Acoustical Society of America 124, 161						
A probabilistic framework for acoustic emission source localization in plate-like structures					62	2012
ED Niri, S Salamone Smart Materials and Structures 21 (3), 035009						
Guided-wave health monitoring of aircraft composite panels under changing temperature					48	2009
S Salamone, I Bartoli, F Lanza Di Scalea, S Coccia Journal of Intelligent Material Systems and Structures 20 (9), 1079-1090						
Acoustic Emission Monitoring of a Reinforced Concrete Shear Wall by b-value based Outlier Analysis					42	2013
A Farhidzadeh, S Salamone, B Luna, A Whittaker Structural Health Monitoring 12 (1), 3-13						

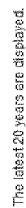
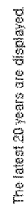
Add co-authors

Brennan Dubuc	+	x
Jen Rhymer	+	x
Bismarck Luna	+	x
Ayman Moustafa	+	x
Hyonny Kim	+	x
Marcello Cammarata	+	x
Marc Veletzos	+	x
Charles Farrar	+	x
Gyuhae Park	+	x

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Items from this Citation Report

- By: Salamone, Salvatore; Bartoli, Ivan; di Scalea, Francesco Lanza; et al.

Year	2013	2014	2015	2016	2017	Total	Average Citations per Year
1	85	89	82	105	36	472	47.20
2	16	9	5	10	2	66	6.60
3	7	6	5	9	2	33	5.50
4	5	7	5	4	0	33	3.67

**5. ACADEMIC ADVISING, COUNSELING, AND OTHER STUDENT SERVICES****Budget Council Statement**

Prepared by Eric B. Williamson and Todd A. Helwig



Dr. Salamone has been active in various aspects of academic advising and counseling for undergraduate and graduate students. Dr. Salamone participates in the formal departmental advising process for undergraduates each semester. He also meets with undergraduate students outside of the formal course advising process to discuss career directions, graduate school opportunities, and undergraduate research opportunities. During advising, Dr. Salamone seeks student feedback and potential areas for improving the curriculum. In addition, Dr. Salamone has involved several undergraduate students in his research projects, both at the University of Texas at Austin (UT Austin) and the University at Buffalo, SUNY (UB-SUNY). Based upon discussions with Dr. Salamone, it is clear that involving undergraduates in his research program is something that he is passionate about since such an opportunity played a major role in his own career development. At the graduate level, Dr. Salamone provides advice to students on course selection, career opportunities, opportunities for M.S. students to continue for a Ph.D., and other matters of interest to the students. He also provides mentoring in a way that permits graduate students to develop research management skills, allowing them to take an active role in contributing to research proposals and in helping supervise undergraduate research assistants.

Dr. Salamone has actively participated in graduate recruiting for the Structural Engineering area. This work involves reviewing a portion of the graduate applications submitted to the program and participation in recruiting activities, including meeting with visiting students interested in attending graduate school at UT Austin. During the 2016-17 academic year, Dr. Salamone co-chaired the graduate recruiting efforts for the Structural Engineering area, which required him to help arrange all recruiting activities, including the recruiting weekend event held jointly with other areas within CAEE. While this effort is clearly related to service, there is also a significant amount of advising and counselling associated with the students that visit while considering UT Austin for their graduate studies.

Dr. Salamone's ability to advise his students is evident in the awards and recognition his students have had at both the undergraduate and graduate levels. In only his second year as an assistant professor at UB-SUNY, one of his first PhD students and he received a Best Paper Award at the 2012 Acoustic Emission Working Group Meeting for the paper "Introducing sifted b-value analysis and a new crack classification for monitoring reinforced concrete shear walls by acoustic emission". One of his undergraduate research assistants received the 2014 American Society for Nondestructive Testing Robert B. Oliver Scholarship, an award given to an undergraduate student with the most outstanding manuscript on nondestructive testing research. The Ph.D. students that Dr. Salamone has supervised are now employed as faculty members at other universities or by major engineering firms. His students are now working at New Mexico State University, Makerere University in Uganda, and the MISTRAS group.

The contributions of Dr. Salamone in academic advising and counseling are at the norm and consistent with expectations for faculty in the CAEE Department and in Structural Engineering.

Salvatore Salamone

Department of Civil, Architectural  
and Environmental Engineering



### ACADEMIC ADVISING, COUNSELING, AND OTHER STUDENT SERVICES

I believe strongly in the importance of mentoring students at both the undergraduate and graduate levels. This relationship can help stimulate a student's curiosity in new ideas and encourage their involvement in research programs.

#### Undergraduate Advising

I have a deep interest in mentoring undergraduate students. Through my own experiences, I have seen firsthand the importance of undergraduate involvement in research. My participation in undergraduate research programs played a tremendous role in shaping my academic goals and encouraging me to seek a Ph.D. For this reason, I am committed to providing the same opportunities for other students. I have advised three undergraduate students in research since arriving at UT in fall 2015. At least one graduate student typically supervises each undergraduate student. To spark motivation and entice students to do their work, the broad impact that each project has on the scientific community and society at large is continually stressed. As students begin to appreciate the greater impact of their work, they begin to develop a spontaneous drive for success and excellence. My first undergraduate student at UT was Marco Munoz, who was involved in a project sponsored by the Texas Department of Transportation (TxDOT). Marco worked on the design of the experimental setup needed to carry out accelerated corrosion tests of prestressed steel strands. During my third semester, Caitlyn Kallus showed interest in conducting research in my group. She worked on the analysis of crack patterns in reinforced concrete structures. Sivateja Ponnuru was a student in the ECE Department. Sivateja worked on an independent research project on piezoelectric energy-harvesting devices. He carried out some preliminary tests on a device currently under development in my group. I have been fortunate to work with high caliber undergraduate researchers since my time as an assistant professor at the University at Buffalo. I mentored six undergraduate students there mostly through two NSF programs, that is, the NEES summer REU and LSAMP. Notably, Mr. Tresor Mavinga won the 2014 Robert B. Oliver scholarship from the American Society for Nondestructive Testing (ASNT) based on his research conducted in my lab. Mr. Mavinga is currently pursuing a graduate education in civil engineering at the University of Maryland. Brennan Dubuc received an NSF scholarship to attend the 2014 Asia-Pacific summer school on smart structures technology hosted by the National Taiwan University and the National Center for Research on Earthquake Engineering located in Taipei, Taiwan. He is currently a Ph.D. student in my research group supported by a TxDOT project. In addition to research supervision, I also advise undergraduate students each semester before course registration, as part of the CAEE department's official advising program. I help them to choose the courses they need to progress in their degree program, but I also use these meetings as an opportunity to learn more about their goals and to obtain feedback about our curriculum. I have found students, particularly seniors ready to graduate, to be surprisingly frank about what parts of the curriculum they felt were valuable and what parts they felt could be improved.

#### Graduate Advising

At the graduate level, I advise graduate students to pioneer the next generation of methodologies and technologies for the structural health monitoring and nondestructive evaluation of civil, mechanical and aerospace structures. I have developed a graduate mentoring plan in which students experience intellectual freedom in a structured research framework. Specifically, two main outcomes I usually seek through my mentoring plan are as follows:

- *Broadening and refining technical expertise*, by engaging the graduate student in scientifically rigorous research in an area that is both appealing, based on personal interests of the student, and complementary to the expertise developed through his/her previous studies.
- *Developing and strengthening the experience and skills in the management of research*, by involving the student in project management and coordination activities in ongoing projects.

Specific elements of my mentoring plan include: (1) participation in seminars, workshops and training consultations on how to write research papers; (2) travel to at least one conference each year to present a paper; and (3) participation in bi-weekly research group meetings, in which students are expected to present their research regularly. My research group meetings are structured as follows: graduate students are strongly advised to submit a progress report the night before this meeting. They follow a format to submit these reports, where key data collected over the week are presented with a short discussion followed by a proposed work plan for the coming week. The group meeting starts off with an overall summary, announcements of achievements, new paper invitations, and conference calls. Then I go around the table and discuss with each student their specific research issues that they could not discuss during their individual weekly meetings. The progress report is used to guide such discussions. The students have repeatedly told me that a bi-weekly progress report has helped them keep track of their work and plan effectively. I have graduated three Ph.D. students during my tenure at the University at Buffalo, and currently I'm advising four Ph.D. students (three of them as a sole advisor) at UT. Most of the Ph.D. students I have advised seek academic positions after graduation. Ehsan Dehghanniri started as an Assistant Professor in Civil and Environmental Engineering at New Mexico State University in spring 2017. Moses Matovu started as an Assistant Professor at Makerere University, Uganda, whereas Alireza Farhidzadeh has been working as a scientist at the MISTRAS group, a leading "one source" global provider of acoustic emission technology-enabled asset protection solutions used to evaluate the structural integrity of critical energy, industrial and public infrastructure. I have been fortunate to have high quality graduate students who have developed great camaraderie in my group. Mentoring these exceptional students and watching their career success have been continuing sources of inspiration for me.

## Candidate's Summary of Advising, Counseling, and Other Student Services

Salvatore Salamone

**Table 1. Summary of Academic Advising (University of Texas at Austin)**

<b>Metric</b>	<b>Value</b>
Student organizations advised	
Undergraduate researchers supervised	3
PhD students completed	
MS students completed	1
PhD students in pipeline (as of 09/2017)*	3.5 (3 sole advisor)
MS students in pipeline (as of 09/2017)	1

\*count 1 if sole advisor, 0.5 if co-advised

**Table 2. Degrees Conferred to Graduate Students Supervised (University of Texas at Austin)**

<b>Student Name</b>	<b>Co-Supervisor</b>	<b>Degree</b>	<b>Start Date</b>	<b>Graduation Date</b>	<b>Placement</b>
Brennan Dubuc		M.S.	08/2015	07/2017	Ph.D. student under my supervision

**Table 3. Summary of Academic Advising (University at Buffalo)**

<b>Metric</b>	<b>Value</b>
Student organizations advised	
Undergraduate researchers supervised	6
PhD students completed	3 (3 sole advisor)
MS students completed	3 (3 sole advisor)

**Table 4. Degrees Conferred to Graduate Students Supervised (University at Buffalo)**

<b>Student Name</b>	<b>Co-Supervisor</b>	<b>Degree</b>	<b>Start Date</b>	<b>Graduation Date</b>	<b>Placement</b>
Ehsan Dehghanniri		PhD	08/2010	09/2014	Assistant Professor, New Mexico State University
Alireza Farhidzadeh		PhD	08/2010	09/2014	Ultrasonic Research Scientist, MISTRAS, INC.
Moses Matovu		PhD	08/2012	09/2015	Assistant Professor, at Makerere University, Uganda
Arvin Ebrahimkhanlou		MS	08/2013	09/2015	Ph.D. student under my supervision at UT
Jan Dokonal		MS	08/2014	09/2015	Structural Design Engineer at Cates Engineering
Sandhya Ravindran		MS	08/2014	01/2015	Bridge Engineer at HDR Engineering INC.

## 6. SERVICE TO THE UNIVERSITY AND TO THE NATION, STATE AND COMMUNITY

### Budget Council Assessment

Prepared by Eric B. Williamson and Todd A. Helwig



Dr. Salamone's service to the Department of Civil, Architectural and Environmental Engineering (CAEE) has been at the level expected of an assistant professor. His primary involvement has been with two committees, each of which considers future trends in research and education. As a member of the Undergraduate Recruiting and Retention Committee, Dr. Salamone suggested a wide range of ideas for improving recruiting efforts, many focusing on communication techniques that appeal to the current generation of students. Many of these ideas take advantage of social media and other platforms widely used by high school students. As a member of the Strategic Vision Implementation Committee, he played an essential role in helping develop a new seminar series involving faculty from many different departments across campus. These seminars have included short research presentations and panel discussions from faculty in history, anthropology, sociology, geography, communications, and architecture. These seminars have laid the groundwork for future multi-disciplinary research collaborations. Currently, Dr. Salamone is serving as the co-chair of graduate recruiting for the Structural Engineering area. The Structural Engineering program generally receives approximately 250-300 applicants, and Dr. Salamone is responsible for helping organize the review of all applicants and coordinating events for the annual recruiting weekend.

Dr. Salamone's professional service is above the norm for an Assistant Professor. He has served as a reviewer of technical information for a variety of funding agencies, both nationally and internationally, and for a large number of technical journals. His outstanding work as a reviewer led to him receiving the Outstanding Reviewer Award from Elsevier's Journal of *Ultrasonics*. Dr. Salamone is a member of the editorial board for *Structural Monitoring and Maintenance: an International Journal* and *Acoustics*. It is noteworthy that Dr. Salamone's professional service extends to a wide range of different organizations. Because of the multi-disciplinary research Dr. Salamone conducts, he actively participates in professional organizations in the fields of civil engineering, experimental mechanics, acoustics, nondestructive testing, and mechanical engineering. He serves on technical committees for both the American Society of Civil Engineers (ASCE) and the American Society of Mechanical Engineers (ASME).

Dr. Salamone's service to the profession has not only been in support of technical activities, but he has also supported educational activities for schools within the Buffalo Public School District. He led an effort to develop interdisciplinary science teaching and learning activities through a summer program at the University of Buffalo. He worked closely with four different science teachers to improve student performance in science courses and to increase student interest in STEM education.

In summary, Dr. Salamone is making outstanding service contributions to CAEE, UT Austin, and the profession. His overall level of activity is above the norm and exceeds expectations for an assistant professor in CAEE.

Salvatore Salamone

Department of Civil, Architectural  
and Environmental Engineering

### SERVICE STATEMENT

In addition to research, teaching, and advising, I have been dedicated to serving my profession during my seven years as an assistant professor. This statement outlines the service contributions I have made to UT, the profession, and the community.

#### Service to the University

During my time at the University of Texas at Austin (UT), my service to the University has been through the Department of Civil, Architectural and Environmental Engineering (CAEE). I consider myself to be extremely fortunate to have served as an active member of the undergraduate recruiting and retention committee (URRC) and the Strategic Vision Implementation Committee (SVIC) of CAEE. During my first year of service as a member of the URRC, I generated new ideas to enhance CAEE's student recruitment. My recommendations included: (1) create a CAEE student ambassadors program, (2) enhanced mailing and e-mail campaign to students we believe are high-achieving and low-income/minority, (3) enhancing CAEE's website by adding student profiles and faces (twitter style), along their career paths, and (4) increasing CAEE public presence in the media, for instance by developing YouTube videos to promote what's best about our Department. The video series may feature student voices discussing topics such as research activities, as well as their life on the Forty Acres. I believe that, from connecting with their peers via email and social networks such as Facebook, Twitter, or Google Plus, students get to know what is trending via the web. Having an online presence on platforms such as YouTube enables us to showcase our products to high school students with targeted messaging or digital advertisements. During my second year at UT, I served as a member of SVIC. This committee is not only a platform to bring new ideas to shape CAEE's future, but also is a venue to learn more about the culture of our department as well as that of UT. My main contribution to the SVIC committee included working closely with my colleagues to develop a new seminar series (namely *Civil Talks: Landscaping the Future*) aimed at facilitating cross-pollination with other departments. The Civil Talks have featured eight speakers from six different departments including history, anthropology, sociology, geography, and communication. The most exciting thing for me has been to see how easily talks and disciplines could be connected immediately during the event, and I think this has been a great start towards more frequent exchanges among different departments. I'm looking forward to interacting with some of them soon! In addition, I've also served as a member of the Distinguished Lecture Committee for CAEE, which has brought in internationally renowned speakers in all areas of civil, architectural, and environmental engineering. Currently, I'm co-chairing the structures group graduate student recruitment committee. While at the University at Buffalo, I served for two years on the undergraduate studies committee, which was charged with the task of reviewing and revising the civil engineering undergraduate curriculum. This committee gave me the opportunity to learn more about ABET requirements, such as objectives and outcomes for a civil engineering program.

#### Service to the Profession

I am an active member of several professional societies, including the American Society of Civil Engineers (ASCE), the Society of Experimental Mechanics (SEM), the Acoustical Society of America (ASA), and the American Society for Nondestructive Testing (ASNT). I have organized numerous conference sessions for the *International Workshop on Structural Health Monitoring (IWSHM)*, the *International Conference on Structural Safety & Reliability*, and recently for The American Society of Mechanical Engineers' (ASME) *International Mechanical Engineering Congress and Exposition (IMECE)*, that is the largest interdisciplinary mechanical engineering conference in the world. The



organization of these sessions has required a significant time commitment. I have invited speakers, reviewed the submitted abstracts, organized the sessions, and moderated the sessions at the conference venue. Organization of five such conference sessions has not only been an essential service activity but also has enhanced my reputation in the field. Recently, I was invited to be a member of the international organizing committee at the 10<sup>th</sup> *International Workshop on Structural Health Monitoring*, the most important workshop in the field of structural health monitoring (SHM), held every two years at Stanford University. My duties, as a member of this committee, include organizing special sessions on key and emerging topics, chairing sessions, participating in award selection, and suggesting new subjects and topics for panel discussions. In addition, I have been called on to review proposals for several U.S. federal agencies, including NSF (five times), DOE (three times), USDOT (three times), NASA (once), and also from international agencies such as the Chilean National Science Foundation (FONDECYT), and South Africa's National Research Foundation (NRF). Furthermore, I've served as a reviewer for forty-five journals, including *Journal of the Acoustical Society of America*, *Ultrasonics*, *Smart Material and Structures*, *Structural Health Monitoring*, and *Experimental Mechanics*; I have reviewed at least fifteen journal articles per year. I strongly believe that peer reviewers have significant responsibilities toward authors, editors, and readers. Therefore, I put a tremendous effort to provide in a timely manner an unbiased feedback to the authors and editors. My effort as a reviewer has been recognized with the *Outstanding Reviewer Award* from Elsevier's *Journal of Ultrasonics*, one of the most important journals in the field of ultrasonics. This is an honor granted to a reviewer who provides exceptionally high-quality feedback and performed exceptional service by reviewing a large number of papers. Recently, I was invited to join as an editorial board member for two new journals: 1) *Structural Monitoring and Maintenance: an International Journal*, and 2) *Acoustics*. As an editorial board member, I am involved in reviewing articles, supplying advice locally to potential authors on writing and submission of papers, actively promoting the journals to potential authors and readers, providing feedback on community perception of the journal, and suggesting improvements.

#### **Service to the Community**

Providing professional service to the community has been very fulfilling. My most notable community service has been to schools within the Buffalo Public School (BPS) District. The BPS District is the fourth largest district in NY state, serving an economically and culturally diverse population of approximately 32,700 students, many of whom are struggling to meet NY state standards. The most recent NY state report card data (2008-2009) identifies Buffalo as a Year 7 District in Need of Improvement, with 40% of 8th grade students meeting learning standards (levels 3 and 4) in science, as compared to the state average of 71%; and 58% meeting level 3 and 4 learning standards in math (state average=80%). My goal has been to address this critical need for improved student learning in STEM education by enhancing science teachers' interdisciplinary science inquiry knowledge and skills. I have worked with four teachers during the summers 2012-2013 to develop pilot-tests and refine interdisciplinary science inquiry teaching and learning activities. Details of these collaborations are described in my teaching statement. I believe that these kinds of activities can encourage students to think like engineers, understand science concepts, and spark their interest in engineering careers. In summary, I believe service to the community, university, state, and nation is a critically important part of scholarly work. Not only is it requisite for us to maintain our academic system, it is paramount to influencing the career paths of the next generation of scientists and engineers, who will advance our society. I am happy to play a small role in this grand effort.



## 7. HONORS AND OTHER EVIDENCE OF MERIT OR RECOGNITION

BUDGET COUNCIL STATEMENT  
PREPARED BY ERIC B. WILLIAMSON AND TODD A. HELWIG



Dr. Salamone began his academic career in a tenure-track position as an assistant professor at the University at Buffalo, SUNY (UB-SUNY) in 2010 and moved to the University of Texas at Austin (UT Austin) in 2015. This statement provides highlights on his honors and other evidence of merit at the two institutions.

The quality of Dr. Salamone's work has been recognized by a number of awards and distinction since he began his first tenure-track appointment at UB-SUNY. In 2011, NSF extended a travel award to him so he could attend a workshop on Wind Energy Research. Also in 2011, he received a faculty grant award from the American Society of Nondestructive Testing (ASNT). The ASNT grant was given to him to fund the development of his graduate course on nondestructive evaluation. The following year he received a Best Paper Award at the 2012 Acoustic Emission Working Group Meeting for the paper "Introducing sifted b-value analysis and a new crack classification for monitoring reinforced concrete shear walls by acoustic emission" that he co-authored with one of his first PhD students. To receive this accolade in only his second year as an assistant professor is recognition of not only the high quality of his work, but also his ability to mentor his students. In 2014, Dr. Salamone was given the Achenbach Medal from the *Journal of Structural Health Monitoring*, which is an award that recognizes outstanding researchers within 10 years of receiving their PhD that has made outstanding contributions to the advancement of the field of structural health monitoring. The Achenbach Medal is an international award, and it is particularly impressive that Dr. Salamone received this award in only his 7<sup>th</sup> year after receiving his PhD and only his 4<sup>th</sup> year as an assistant professor.

In addition to the above cited research awards, Dr. Salamone has consistently maintained a strong record of funding through research grants from a wide range of federal and state funding sources. The federal sources include the National Science Foundation, the Office of Naval Research, the US Department of Transportation, and the Pipeline Hazard Management Safety Administration. He has served as the PI on 9 of the 11 grants that he has worked on.

The continuous level of recognition through grants, awards, and research funding throughout his seven years at the rank of assistant professor at two institutions is a strong recognition of high quality work. The honors and other evidence of merit or recognition is above the norm for assistant professors in the CAEE area.

Salvatore Salamone

Department of Civil, Architectural  
and Environmental Engineering

## Honors and Other Evidences of Merit or Recognition

My group's scholarly research has been recognized via awards, honors, and grants. A list of some of these honors and awards may be found in my curriculum vitae. Below, I will elaborate on a few of these awards and discuss some additional items not included on my resume.

### Recognition via research grants

My research as an assistant professor has been consistently funded by federal and state agencies. Federal agencies include the National Science Foundation (NSF), the Office of Naval Research (ONR), the United States Department of Transportation (USDOT), and Pipeline Hazard Management Safety Administration (PHMSA). State agencies that have funded my work include the Texas Department of Transportation (TXDOT), the University Transportation Research Center 2 (UTRC2), and the New York State Pollution Prevention Institute. During my tenure at UT, my group has received four extramural research grants. I am the sole PI on two of these projects (NSF, and ONR), and I'm the Co-PI on two other grants both sponsored by the TXDOT. Also, I'm in the process to receive a research grant from the Federal Rail Administration (~100K as PI), and from ExxonMobil (~200K as PI). Funding has been steady in my research group since my time as an assistant professor at the University at Buffalo (UB). At UB, my group received 6 extramurally funded projects, where I was the PI on all of those projects. The funding agencies included the NSF, the USDOT, and the PHMSA. My career research funding has been ~\$2M, of which ~\$1.4M has been my research group's share. Just in the last two years as assistant professor at UT, I have been part of funded research projects amassing nearly \$1.4M, of which \$900K has been awarded to my research group. The novel fundamental research in my group promises to continue the funding stream in the coming years.

### Recognition via Publications and Awards

In the last seven years, I have published or had accepted for publication thirty journal publications in top scholarly journals in my field including: *Ultrasonics*, *Smart Material and Structures*, *Structural Health Monitoring*, *Structural Control and Health Monitoring*, and *Experimental Mechanics*. My research thus far has had measurable impact on the field and is cited by scholars across fields. My h-index is 17 with a total career citation count of 921, where 838 of the citations have been made between 2012 and 2017. The first publication with my first Ph.D. student as co-author (*UB-14*), has been cited more than 60 times since 2012, and my i-10 index (papers cited more than 10 times) is 25; 18 out of the 25 of these papers were published during my tenure as an assistant professor (both at UT and UB). In recognition of my impactful research I was awarded the '2014 Achenbach Medal' by the International Workshop on Structural Health Monitoring. The medal is awarded annually to a young researcher within 10 years of receipt of a doctorate and who has made an outstanding research contribution in the field of Structural Health Monitoring. The international award is given to one individual annually. I received the medal during a ceremony at the 7<sup>th</sup> European Workshop on Structural Health Monitoring in Nantes, France, in July 2014 (see figure 1). In 2011, I received the American Society for Nondestructive Testing's (ASNT) Faculty Grant award to develop a new course in structural health monitoring (SHM) and nondestructive evaluation (NDE). The



**Figure 1.** Professor Salamone receiving 2014 Achenbach Medal

ASNT is the world's largest technical society for NDE professionals. I currently teach this course at UT (CE397 SHM/NDE) every spring semester. Prior to my arrival at The University of Texas at Austin (UT), my group's research was also featured in prestigious magazines, including the *ASCE's Civil Engineering Magazine*, and the *Engineering News-Record*. My group's research also has been recognized by numerous student awards. In May 2012, Alireza Farhidzadeh, a Ph.D. student under my supervision at that time, won the best paper award at the 54<sup>th</sup> Acoustic Emission Working Group Meeting, while in 2016 Arvin Ebrahimkhanlou, a Ph.D. student under my supervision at UT, received an honorable mention at the 58<sup>th</sup> Acoustic Emission Working Group Meeting. Also, in 2014 two undergraduate students, working in my group, received two awards. Tresor Mavinga, won the Robert B. Oliver scholarship from the ASNT based on his research conducted under my supervision, while Brennan Dubuc (currently a Ph.D. student working under my supervision) won an NSF award to attend the 2014 Asia-Pacific summer school on smart structures technology hosted by the National Taiwan University and the National Center for Research on Earthquake Engineering in Taipei, Taiwan.

### Other Recognition

My research expertise has been recognized in a variety of other ways. I have recently been invited to join the international organizing committee at the 10<sup>th</sup> *International Workshop on Structural Health Monitoring* (IWSHM), the most important workshop in the field of structural health monitoring (SHM), held every two years at Stanford University. Also I have been invited to join the editorial board of three journals: 1) *Structural Monitoring and Maintenance: an International Journal*, 2) *Acoustics*, and *Mathematical Problems in Engineering*. As an editorial board member, I am involved in reviewing articles, supplying advice locally to potential authors on writing and submission of papers, actively promoting the journals to potential authors and readers, providing feedback on community perception of the journal, and suggesting improvements. I have organized numerous conference sessions for the IWSHM, the International Conference on Structural Safety & Reliability, and recently for the American Society of Mechanical Engineers' (ASME) International Mechanical Engineering Congress and Exposition (IMECE), that is the largest interdisciplinary mechanical engineering conference in the world. In addition, I have been called on to review proposals for several U.S. federal agencies, including NSF (five times), DOE (three times), USDOT (three times), NASA (once), and also from international agencies such as the Chilean National Science Foundation (FONDECYT), and South Africa's National Research Foundation (NRF). Furthermore, I have served as a reviewer for forty-five journals, including *Journal of the Acoustical Society of America*, *Ultrasonics*, *Smart Material and Structures*, *Structural Health Monitoring*, and *Experimental Mechanics*. My effort as a reviewer has been recognized with the *Outstanding Reviewer Award* from Elsevier's *Journal of Ultrasonics*, one of the most important journals in the field of ultrasonics. This is an honor granted to a reviewer who provides exceptionally high-quality feedback and performed exceptional service by reviewing a large number of papers. My former graduate student Ehsan DehghanNiri is now in a tenure-track assistant professor at the New Mexico State University. Alireza Farhidzadeh, my former Ph.D student, is a research scientist at the MISTRAS group, a leading global provider of acoustic emission technology. Moses Matovu, a Ph.D student under my supervision, is an assistant professor at Makerere University, in Uganda. I have been fortunate to have high quality graduate students, whom have developed great camaraderie in my group. Mentoring these exceptional students and watching their career success have been continuing sources of inspiration for me.

**LETTERS RECEIVED**

Letters should be listed alphabetically by last name.

Name of reviewer, rank or title, department, university	<b>Dr. Fu-Kuo Chang</b> Professor Department of Aeronautics and Astronautics Stanford University
Brief statement of expertise and reason for selection*	Dr. Chang's primary research interest is in the areas of structural health monitoring (SHM), multifunctional materials with applications that range from aircraft and spacecraft structures to bio-engineering medical devices. His specialties include design of embeddable bio-inspired intelligent sensory materials, real-time diagnostics with large sensing data, integrated diagnostics and prognostics for life-cycle management of materials and structures, failure analysis, fracture mechanics for composite materials, and advanced numerical methods for structural analysis. Most of his work involves integration of sensors, materials, software, and hardware to form an integrated structural system.
Other relevant information**	
Nominated by	Candidate
Date letter received	7/27/17

Name of reviewer, rank or title, department, university	<b>Dr. Charles Farrar</b> Adjunct Professor Department of Structural Engineering University of California at San Diego, Director Los Alamos National Laboratory
Brief statement of expertise and reason for selection*	Charles R. (Chuck) Farrar, Ph.D., PE is the President of Los Alamos Dynamics. Chuck Farrar has over 30 years of experience at Los Alamos National Laboratory (LANL). He is currently the director of LANL's Engineering Institute. His work has been recognized at LANL through his reception of the inaugural Los Alamos Fellows Prize for Technical Leadership and by the Structural Health Monitoring community through the reception of the inaugural Lifetime Achievement Award in Structural Health Monitoring. In January of 2007, he was elected to Fellow of the American Society of Mechanical Engineers, and in 2012, he was elected as a Fellow of Los Alamos National Laboratory. Although Dr. Farrar has published two conference papers with Prof. Salamone, he is still considered to be an arm's length reviewer. The papers were published only a few months after Prof. Salamone became a visiting scholar in Dr. Lanza di Scalea's research group at UC San Diego (UCSD). Both proceedings were part of a joint project between UCSD and Los Alamos National Lab, so Dr. Lanza (the PI at UCSD) included all the Co-PIs from Los Alamos (Dr. Park and Dr. Farrar) as co-authors. Although Dr. Farrar was a co-author, Prof. Salamone has never interacted with him. In fact, he never appeared in any subsequent journal paper that Prof. Salamone published based on his work at UCSD.
Other relevant information**	
Nominated by	Budget Council
Date letter received	8/7/17

\*Provide additional detail for any reviewer not at a peer institution

\*\* Provide explanation for any reviewer not at arm's length.

Name of reviewer, rank or title, department, university	<b>Dr. Daniel Inman</b> Professor and Department Chair of the Department of Aerospace Engineering Department of Aerospace Engineering University of Michigan
Brief statement of expertise and reason for selection*	Dr. Inman is currently the Chair of the Department of Aerospace Engineering at the University of Michigan. He is a Fellow of the American Academy of Mechanics (AAM), the American Society of Mechanical Engineers (ASME), the International Institute of Acoustics and Vibration, and the American Institute of Aeronautics and Astronautics (AIAA). He is currently Technical Editor of the <i>Journal of Intelligent Material Systems and Structures</i> (1999- ). He received the ASME Den Hartog Award in 2007 and the Lifetime Achievement award in Structural Health Monitoring in 2009. He has served as a Member-at-Large on the Society of Experimental Mechanics Executive Board (2008-2010) and as former Chair of the ASME Applied Mechanics Division.
Other relevant information**	
Nominated by	Candidate
Date letter received	6/2/17

Name of reviewer, rank or title, department, university	<b>Dr. Clifford Lissenden</b> Professor of Engineering Science and Mechanics Department of Engineering Science and Mechanics Pennsylvania State University
Brief statement of expertise and reason for selection*	Dr. Lissenden's expertise is in the general area of nondestructive characterization of materials using ultrasonic guided waves. His work focuses on characterizing damage and precursors to damage and is applicable to metals, composites, concrete, rock, and bone. His research focuses on nondestructive testing and inspection, structural health monitoring, process monitoring, and cloaking structures from earthquakes. He is a Fellow of the American Society of Mechanical Engineers (ASME).
Other relevant information**	
Nominated by	Budget Council
Date letter received	7/7/17

\*Provide additional detail for any reviewer not at a peer institution

\*\* Provide explanation for any reviewer not at arm's length.

Name of reviewer, rank or title, department, university	<b>Dr. Jerome P. Lynch</b> Department Chair, Professor of Civil and Environmental Engineering and Electrical Engineering and Computer Science University of Michigan
Brief statement of expertise and reason for selection*	Dr. Jerome Lynch is a Professor of Civil and Environmental Engineering at the University of Michigan; he is also a Professor of Electrical Engineering and Computer Science by courtesy. His current research interests are in the areas of wireless cyber-physical systems, cyberinfrastructure tools for management of structural monitoring datasets, and nano-engineered thin film sensors for damage detection and structural health monitoring. Dr. Lynch has received the 2005 ONR Young Investigator Award, 2009 NSF CAREER Award, the 2009 Presidential Early Career Award for Scientists and Engineers (PECASE), the 2012 ASCE EMI Leonardo da Vinci Award, and the 2014 ASCE Huber Award.
Other relevant information**	
Nominated by	Budget Council
Date letter received	7/5/17

Name of reviewer, rank or title, department, university	<b>Dr. Satish Nagarajaiah</b> Professor of Civil and Mechanical Engineering Department of Civil and Environmental Engineering Department of Mechanical Engineering and Material Science Rice University
Brief statement of expertise and reason for selection*	Dr. Nagarajaiah's research focuses on the broad area of structural dynamic systems, smart structures, system identification, structural health monitoring, sensing and monitoring of structures subjected to earthquake, wind and waves, seismic protection, and applied nanotechnology related to sensing. His editorial activities includes service as the managing editor of the <i>ASCE Journal of Structural Engineering</i> [ASCE International journal], Editor of <i>Structural Control and Health Monitoring</i> [Wiley International Journal] and Editor-in-chief [North America] of <i>Structural Monitoring and Maintenance</i> [Techno-press International Journal]. He served as the chair/vice-chair/secretary/member (2006-to-2012) of ASCE, SEI, Technical Activities Division Executive Committee—the highest technical body in Structures Division. He served as a member of the board of directors of the international association of structural control and monitoring (2008-2012). He served as the President of the U.S. panel on structural control and monitoring (2006-2008). He was the founding chair of ASCE's structural health monitoring committee (2004-2006), the ASCE-Engineering Mechanics Institute's structural control committee (1998-2002), and the ASCE Structural Engineering Institute.
Other relevant information**	
Nominated by	Budget Council
Date letter received	7/7/17

\*Provide additional detail for any reviewer not at a peer institution

\*\* Provide explanation for any reviewer not at arm's length.



Name of reviewer, rank or title, department, university	<b>Dr. Massimo Ruzzene</b> Pratt & Whitney Professor of Aerospace Engineering Guggenheim School of Aerospace Engineering Georgia Institute of Technology
Brief statement of expertise and reason for selection*	Dr. Ruzzene is a Professor in Aerospace Engineering, with a joint appointment in Mechanical Engineering, at the Georgia Institute of Technology. Most of his current and past research has focused on solid mechanics, structural dynamics, wave propagation with application to structural health monitoring, and vibration and noise control. M. Ruzzene is a Fellow of ASME, an Associate Fellow of AIAA, and a member of AHS, and ASA. He was the Program Director for the Dynamics, Control and System Diagnostics Program of CMMI at the National Science Foundation.
Other relevant information**	
Nominated by	Candidate
Date letter received	7/16/17

Name of reviewer, rank or title, department, university	<b>Dr. Andrew Smyth</b> Professor of Civil Engineering and Engineering Mechanics Department of Civil Engineering and Engineering Mechanics Columbia University
Brief statement of expertise and reason for selection*	Andrew Smyth is a Professor of Civil Engineering and Engineering Mechanics at Columbia Engineering. He specializes in structural health monitoring, using sensor information to determine the condition of critical infrastructure. Prof. Smyth has been involved with the sensor instrumentation and vibration analysis and remote monitoring of a large number of iconic long-span bridges and landmark buildings and museums. His research interests include the development of data fusion and system identification algorithms to derive maximum information from large heterogeneous sensor networks monitoring dynamical systems, nonlinear system dynamical modeling and simulation, and natural hazards risk assessment. In 2011, was elected to serve on the Board of Governors of the ASCE Engineering Mechanics Institute.
Other relevant information**	
Nominated by	Budget Council
Date letter received	8/21/17

\*Provide additional detail for any reviewer not at a peer institution

\*\* Provide explanation for any reviewer not at arm's length.



**THE UNIVERSITY OF TEXAS AT AUSTIN**  
Cockrell School of Engineering

*Department of Civil, Architectural and Environmental Engineering*  
301 E. Dean Keeton Street • Stop C1700 • Austin, TX 78712 • 512-471-4921

June 1, 2017

Dr. Andrew Smyth  
Columbia University  
Department of Civil Engineering and Engineering Mechanics

Dear Professor Smyth:

The Department of Civil, Architectural and Environmental Engineering is considering Dr. Salvatore Salamone for tenure and advancement in rank to the position of associate professor at the University of Texas at Austin. We would appreciate your candid assessment of his scholarly contributions to assist our decision-making process. Excellent teaching is an important criterion for promotion, but our evaluation of teaching is being carried out separately, and we are asking you only for information about his scholarly distinction. Copies of Dr. Salamone's curriculum vitae and several recent papers are enclosed for your review.

We would appreciate your opinions regarding Dr. Salamone's major engineering and/or scientific contributions. In preparing your assessment, please consider the following questions:

1. Do you know Dr. Salamone, and if so, for how long and under what circumstances?
2. What are the original, innovative, and/or important contributions that he has made in his field of research? Have his publications influenced the thinking of, or the methods used by, others in your field?
3. How would you assess Dr. Salamone's development compared with others in his cohort at research-intensive universities?
4. What is your perspective on Dr. Salamone's promise for further professional growth and leadership?

We would be grateful for any additional comments you might have. The more specific you can be in your comments, the more helpful your evaluation will be.

Under the laws of the State of Texas, Dr. Salamone has the right to request to see any materials in his personnel file, including your letter. Members of our faculty and internal review committees who see your letter as part of the promotion process will hold the comments you make in confidence, however.

For your comments to receive full consideration, we will need to receive a signed letter from you no later than July 15, 2017. It is not necessary for you to send us a hard copy of your letter, an electronic or scanned version is sufficient, provided your institutional letterhead and your signature are included. In addition, please enclose a copy of a short version of your curriculum vitae (preferably no longer than two pages) or the URL for your web site where we may obtain this information. If you have questions, please call me at the number given on the letterhead.

Thank you for your time and assistance with this important matter. As faculty members, we realize that the amount of time required to do a thoughtful review is considerable.

Sincerely,

A handwritten signature in cursive script that reads "Richard L. Corsi".

Richard L. Corsi, Ph.D., P.E.  
Chair, Department of Civil, Architectural & Environmental Engineering  
Joe J. King Chair in Engineering #2  
The University of Texas at Austin

**Candidate's Summary of Activities**  
**Salvatore Salamone**

**Table 1. Statistics for "Assistant Professor Rank" at University of Texas (UT)**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	09 / 42
Peer-reviewed conference proceedings (in rank and total)	06 / 44
Number of journal papers in rank with supervised student(s) from UT as co-author	5
Total citations of all publications (career) from ISI Web of Knowledge	472
h-index (career) from ISI Web of Knowledge	13
Total citations of all publications (career) from Google Scholar or Publish or Perish	932
h-index (career) from Google Scholar or Publish or Perish	17
Total external research funding raised in rank	\$1,498,898
Total external research funding raised in rank (candidate's share)	\$906,497
Total number of external grants/contracts awarded in rank	4
Number of external grants/contracts awarded in rank as PI	2
PhD students completed†	0
MS students completed†	1 (1 sole advisor)
PhD students in pipeline (as of 09/2017) †	3.5 (3 sole advisor)
MS students in pipeline (as of 09/2017) †	1 (1 sole advisor)
Number of courses taught	5
Total number of students taught in organized courses	124
Average instructor evaluation for UG courses	4.85
Average instructor evaluation for Grad courses	4.67
Average course evaluation for UG courses	4.55
Average course evaluation for Grad courses	4.30
Number of teaching awards	
Student organizations advised	
Undergraduate researchers supervised	3
Service on journal editorial boards	3
Number of symposia organized	2

**Table 2. Research Statistics for "Assistant Professor Rank" at University at Buffalo (UB)**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	21 / 42
Peer-reviewed conference proceedings (in rank and total)	16 / 44
Number of journal papers in rank with supervised student(s) from UT as co-author	18
Total external research funding raised in rank	\$459,424
Total external research funding raised in rank (candidate's share)	\$434,424
Total number of external grants/contracts awarded in rank	6
Number of external grants/contracts awarded in rank as PI	6
PhD students completed†	3 (3 sole advisor)
MS students completed†	3 (3 sole advisor)
Number of courses taught	11
Total number of students taught in organized courses	510
Average instructor evaluation for UG courses	4.6
Average instructor evaluation for Grad courses	4.6

Average course evaluation for UG courses	4.4
Average course evaluation for Grad courses	4.5
Number of teaching awards	
Student organizations advised	
Undergraduate researchers supervised	6
Number of symposia organized	3

## Candidate's Summary on Research

Salvatore Salamone

**Table 1. Research Summary while in rank at the University of Texas at Austin**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	09 / 42
Peer-reviewed conference proceedings (in rank and total)	06 / 44
Number of journal papers in rank with supervised student(s) from UT as co-author	5
Total citations of all publications (career) from ISI Web of Knowledge	472
h-index (career) from ISI Web of Knowledge	13
Total citations of all publications (career) from Google Scholar or Publish or Perish	932
h-index (career) from Google Scholar or Publish or Perish	17
Total external research funding raised in rank at UT	\$1,498,898
Total external research funding raised in rank at UT (candidate's share)	\$906,497
Total number of external grants/contracts awarded in rank at UT	4
Number of external grants/contracts awarded in rank as PI at UT	2

**Table 2. External Grants and Contracts Awarded at the University of Texas at Austin**

<b>Role of Candidate and Co-Investigators</b>	<b>Title</b>	<b>Agency</b>	<b>Project Total</b>	<b>Candidate's Share</b>	<b>Percentage</b>	<b>Grant Period</b>
PI: Salvatore Salamone	Toward Integrated Structural Health Monitoring Systems for Navy Structures	Office of Naval Research	\$300,000	\$300,000	100%	04/01/2017-02/29/2020
PI: Salvatore Salamone	A vision-based technique for damage assessment of civil structures	National Science Foundation	\$179,798	\$179,798	100%	07/01/2015-07/31/2016
PI: Trevor Hrynyk, CAEE Co-PI: Salvatore Salamone Co-PI: Oguzhan Bayrak, CAEE	Evaluation of Structural Cracking in Concrete	Texas Department of Transportation	\$497,102	\$165,700	33%	01/01/2016-08/31/2018
PI: Raissa Ferron, CAEE Co-PI: Salvatore Salamone	Evaluating Long-Term Durability and Performance of Prestressed Concrete Beam with Extensive Surface Cracking	Texas Department of Transportation	\$521,998	\$260,999	50%	01/01/2016-08/31/2018
<b>TOTAL</b>			<b>\$1,498,898</b>	<b>\$906,497</b>		

**Table 3. Research Summary while in rank at the University at Buffalo**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	21 / 42
Peer-reviewed conference proceedings (in rank and total)	16 / 44
Number of journal papers in rank with supervised student(s) from UB as co-author	18
Total citations of all publications (career) from ISI Web of Knowledge	472
h-index (career) from ISI Web of Knowledge	13
Total citations of all publications (career) from Google Scholar or Publish or Perish	932
h-index (career) from Google Scholar or Publish or Perish	17
Total external research funding raised in rank at UB	\$459,424
Total external research funding raised in rank at UT (candidate's share)	\$434,424
Total number of external grants/contracts awarded in rank at UB	6
Number of external grants/contracts awarded in rank as PI at UB	6

**Table 4. External Grants and Contracts Awarded the University at Buffalo**

<b>Role of Candidate and Co-Investigators</b>	<b>Title</b>	<b>Agency</b>	<b>Project Total</b>	<b>Candidate's Share</b>	<b>Percentage</b>	<b>Grant Period</b>
PI: Salvatore Salamone	Toward permanently installed pipeline monitoring systems	Pipeline & Hazardous Materials Safety Administration	\$146,000	\$146,000	100%	08/01/2013-06/30/2015
PI: Salvatore Salamone	A vision-based technique for damage assessment of civil structures	National Science Foundation	\$115,424	\$115,424	100%	08/01/2013-06/30/2015
PI: Salvatore Salamone Co-PI: Guangwen Zhou, State University of New York at Binghamton	Collaborative research to advance scientific knowledge of the mechanism of corrosion in civil infrastructures	State University of New York (SUNY) Research Foundation	\$100,000	\$75,000	75%	12/01/2012-11/30/2014
PI: Salvatore Salamone	Corrosion damage assessment of post-tensioned concrete structures	United States Department of Transportation (through the University Transportation Research Center 2	\$60,000	\$60,000	100%	12/22/2011-02/28/2013
PI: Salvatore Salamone	Smart lifeline systems for improving water and energy efficiency	The New York State Pollution Prevention Institute	\$30,000	\$30,000	100%	03/01/2013-09/30/2013
PI: Salvatore Salamone	Revision of graduate course CIE500S "Introduction to nondestructive evaluation	The American Society of Nondestructive Evaluation	\$8,000	\$8,000	100%	05/01/2011-06/01/2012
<b>TOTAL</b>			<b>\$459,424</b>	<b>\$434,424</b>		